JOURNAL
OF
THE MILITARY SERVICE INSTITUTION
OF THE
UNITED STATES.

"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

Vol. XXXVII. SEPTEMBER-OCTOBER, 1905. No. CXXXVII.

OBSERVATIONS ON MILITARY SERVICE IN EUROPE.

BY CAPTAIN J. A. RYAN, ADJUTANT,
FIFTEENTH CAVALRY.*

THE MILITARY SECRETARY, U. S. ARMY.

SIR: I have the honor to report that while on leave of absence in Europe, from December 28, 1904, till April 20, 1905, I visited Ireland, England, France, Belgium, Germany, Austria and Italy. I took occasion to observe the cavalry of all these countries and visited the battle-fields of Waterloo, Königgrätz, Austerlitz, Aspern and Wagram, as well as the Island of Lobau and the point of crossing the Danube to that island.

My opportunities for observing the cavalry at drill were limited, due to the time of year, which confined them to the barrack yard and to the careful scrutiny exercised in all Continental armies to exclude strangers. I did, however, have a good chance to observe both the English and the German cavalry at close range and I shall refer only to those points wherein I deem their work better than our own.

ENGLISH CAVALRY.

Horse Guards.—These regiments are composed of picked men and horses. They present a very striking appearance in

*While on leave of absence from December 28, 1904, to April 20, 1905. Published by permission of the Second Division General Staff.

their showy uniforms, but it is difficult to believe that men could ever fight, as they did years ago, in such a dress. The set-up of the men was very good, a remark that applies to most British soldiers.

Thirteenth Hussars.—This regiment is stationed at Hounslow, about twelve miles from London. They have a small riding hall in which the recruit horses and men are trained. A drill was in progress the day I was there. A squad of twelve men, drilled by a sergeant, under the supervision of a riding-master. Their horses were new, unassigned, and had been under instruction for three months. They were splendid types of a cavalry horse, about 15-1, good barrels, fine heads and very tractable, due, no doubt, to the careful handling by men who knew how to train horses to the work of cavalry.

One very noticeable fact here, as well as on the Continent, was that every horse held his head properly, showing a familiarity with bending lessons, and they answered the hand of the rider at once, but with ease and willingness. There was no throwing up of the head or pulling on the bit. These horses, after being walked, trotted and galloped, were put over brush hurdles about three and a half (3½) feet high, which they took without any effort. I was informed that they receive new horses every year at a fixed time, each squadron having horses in excess of the number of men and these new horses are trained perfectly by experienced riders before they are assigned for regular squadron work. When the training of these horses is completed, a board of officers examines them, and if satisfactory, they are passed to the squadron and riders assigned to them.

The type of horse at Hounslow in this excellent cavalry regiment may have been better than the average, I cannot tell, but they were the best squadron horses I saw in Europe. The officers' horses were equally excellent, each officer possessed at least one Irish hunter and some possessed two or more. The Irish hunter is, without doubt, the most suitable horse for cross-country work that can be found.

The horse equipments in this regiment are kept on racks attached to the heel-post and high enough to be out of the way. Steel bits and curb chains are preferred to nickel and they are kept always in serviceable condition. The reason is that after each drill the men, after unsaddling, throw the blanket over their horses to prevent colds. The equipments are then

cleaned at once, after which the blankets are taken off and the horses are groomed.

In all the stables of Europe the peculiar custom prevails of leaving the bedding down all the time. The droppings are collected by stable orderlies, but the straw is not removed at all; new straw being put on over the old bedding, until a mat of straw is formed from eight to twelve inches thick. It is soft and spongy and the clean straw, spread on top daily, prevents staining of the coat by urinary discharge.

They have a large stable for sick horses. This is filled with box stalls and has plenty of light, with a warm southern exposure. All sick horses are at once removed from the squadron corrals and assigned to the sick line, as it is called, the hospital for horses as it were. Here the horses are under the direct charge of the veterinary, who is assisted by enlisted men trained to care for sick horses. I deem this a good method, for it isolates the sick at once and prevents the spread of contagious diseases. It makes the veterinarian alone responsible for the care and treatment during illness, and puts the horses under charge of a horse nurse, whose business it is to do nothing but assist the horses to get well. Besides, the veterinary has all the appliances at hand that may be needed for proper treatment.

The officers discussed the question of the "arme blanche" and while in this regiment both the lance and saber are carried, none seemed to regard either as an effective weapon in the warfare of the present day. Their saber is a good strong one, almost straight. It is lighter than the one carried by the enlisted men of the United States Army and has better protection for the hand, but both weapons are doomed to pass out of use in the near future and give way to automatic revolvers and carbines, used mounted as well as dismounted.

I examined the mess arrangements and found them good. One feature was the variety in the cooking of meats at the same meal. The captain explained that it was done to give men variety at the meal. The bill of fare the day I visited them had on it roast mutton, mutton chops and Irish stew with vegetables, bread, coffee, etc.

The canteen feature in the English Army is a very satisfactory one to the enlisted man and one that enables him to get a lunch and a glass of beer for three or fourpence. Beer is sold freely at threepence a quart, with no ill effects on the

discipline of the garrison. In the room where beer was sold were tables, chairs and in one corner a stage with a piano. Every evening there is music and singing there by the soldiers. It is their club. It keeps them from the low drinking dives and gambling resorts, with their attendant evils, and supplies them with recreation, a very necessary tonic in a soldier's life.

The canteens in the English Army are let by contract, just as we let contracts to supply oats, hay or other supplies. The contractors are men of large capital, who make a business of running canteens for the army wherever the British soldier serves. A board of officers regulates it, but the managers, clerks and cooks are civilians. From the prices charged and the articles furnished soldiers, it appears to be a very satisfactory and practical solution of the canteen business.

GERMAN CAVALRY.

I visited a regiment of Uhlans, stationed on Prince William Street, Berlin, where they were drilling recruits of less than one year's service. The first thing noticeable was the uniformity in the height, weight and build of these men. Platoons from two squadrons were drilling in a rectangular inclosure, made by corrals on three sides and with a fence on the fourth. They were mounted, armed with the lance and they went through the drill of that arm with their horses at a trot, each horse keeping a distance of two horses' lengths from the one ahead in column, which enabled them to walk, trot and canter forward and march backward without once interfering with each other.

Their horses, while not so good as the English horse, were well-built, serviceable-weight carriers, heavier, as a rule, than the American cavalry horse and thoroughly trained. Each horse waited for the signal from his own rider, who always felt the bit lightly but enough to communicate instantly the desired direction. Several tests were made while I watched them, such as leaving platoon in line. One trooper would ride to the front ten yards, go by the right flank to the right, then by right flank to the rear, right flank again till in rear of his place and by the right flank again, moving up into the place he had left without disturbing a horse or a man. The whole secret of it is the trained horse. The recruit is put on the trained horse and soon becomes proficient in his drill. I did not see a horse bolt or get out of ranks during any of the drill. After drill the same

rule holds as in the English cavalry, horses were unsaddled, blanketed, equipments cleaned and horses groomed, a custom that certainly seems to be practical and one that brings good results.

The German soldier rides with a short stirrup and carries his feet well, almost parallel to the horse's sides. His leg work is excellent; he uses the spur intelligently and uses his legs constantly in directing his horse. He, too, shows a training in horsemanship that is the result of hard, patient drill. The Germans jump their horses more than we do. In this small drill ground there were four jumps; one a brick hurdle about three feet, one an imitation brick wall about the same height and the third jump was a shallow ditch, while the fourth consisted of a pile of logs held together by strap iron on the ends.

I visited their stables and they have the same objectionable custom, common to all European armies, of never removing the straw from under a horse, for drying or cleaning. The stables are well built and roomy. They take good care of their horses, for, after drill, they groom or dry them off with straw at once, and if it is chilly they throw a blanket over them. The blanket used on the horse is washed regularly, not like ours, left in one fold from month to month. Our blankets should be washed every week and mended, if torn; we are behind them in this regard. Their blankets last twelve years with care, ours scarcely twelve months.

Their attention to their steel bits shows another matter for our consideration. Right after the bit leaves the horse's mouth it is cleaned and dried; there is no leaving it till inspection day. The equipments were placed on saddle racks, just in rear of the horses, where they can always be inspected. They have no weekly inspection but are inspected whenever the captain or the colonel desires it.

The German overcoat worn by the enlisted men is a good, serviceable article. Our new overcoat misses the point made by the German, in not being fuller in the back, with a plait folded smoothly to take up the surplus cloth and belted to hold it in position. The object being that the coat can be used as a blanket at night. The German soldier wears a small, round, visorless cap, resembling a polo cap, for drill and stable only. It is cheap, neat and serviceable, an improvement on the campaign hat for work in garrison.

I visited their equipment rooms and this explains the neat appearance of the German soldier when seen on the street.

The best uniform is kept in the equipment room, always ready for parade or other necessity. If a soldier gets a pass he goes to the non-commissioned officer in charge of the equipment room, gets his clothes and takes them back on his return. Thus nothing but the poorer working clothes of the soldier are kept in his locker and the sleeping rooms of the barracks are not crowded with clothes closets. The barracks are substantial, but not so well equipped as our own.

The field music of the German infantry consisted of drums and fifes, the fifers also carry a bugle to sound calls. This is the most desirable kind of field music, compared with which our own, of bugles only, is quite secondary. The fife and drum are an inspiration to all soldiers, and especially on a long march this quick, shrill, sharp kind of music, rouses men to get in step and revives their drooping spirits as nothing else can. Music has its effect on the human heart and its influence should not be ignored.

I shall now turn my attention to the officers' riding-schools of France, Germany and Austria. These I visited and inspected thoroughly and regret that my arrival at Rome was just too late to visit the Italian school, whose term had been completed and the school closed when I reached Italy.

OFFICERS' RIDING-SCHOOLS.

French School at Saumur.—The excellent article that appeared in the *Journal of the U. S. Cavalry Association*, of January, 1903, by Captain Mott, as well as the one by Captain Parker, gives all the detailed information obtainable. I will confine myself to what I saw that particularly merited attention.

The completeness of the institution at Saumur does not dawn upon the casual visitor. It is only after he has passed through the riding halls, the stables and all the shops that assist in making perfect riding a possibility and a pleasure, that one can appreciate this great finishing school for mounted officers. There are four riding halls, smaller than our West Point hall, but for a reason. They are large enough for twenty-four men and a greater number under one instructor is more than he can attend to with justice to himself and the students. The halls have large mirrors at the ends, which allow the rider to see his position on the horse four times in one circuit; naturally he will correct any fault in his appearance.

The instructors in France are mounted as well as the students, a custom that prevails there only. In England, Germany and Austria, the instructor acts like a ringmaster, is dismounted, and usually in the center of the hall. He is not sparing in his criticism of students. These officers seem to have no other object in life than good horsemanship. They talk it, think it, live it, day after day, and there is no shamming or avoiding their work, they actually ride many hours a day and have a different horse for every hour.

The hall work seen by me was especially good. At my request they allowed me to see just the every-day work, without any special riding such as visitors are shown. Their work in passaging, turning, passing from trot to gallop and back, changing step at command and jumping, was excellent. All the horses I saw in the hall had had at least six months' instruction under the student officers riding them and they exhibited various degrees of proficiency.

It is erroneous to believe that at Saumur every student is an excellent horseman. They may become such before graduation, but even on their best jumpers I could observe some whose position during a jump was far from correct and some, through accident or nervousness, gave the horse the jerk on landing, so noticeable in a recruit on taking his first high hurdle. Their leg work was excellent; they do so much of it in the hall instruction that when you examine their position critically you notice that the position of the rider's feet is not in harmony with our idea. The feet were seldom parallel, the toes were generally turned out. Their seat was firm and still graceful on all their saddles.

There were three kinds of saddles used that I observed, the regulation saddle, the English saddle and the Louis XIV saddle, so called because it has come down to the French from his time. France, from the time of that great king, has paid great attention to horse training and riding and this saddle has, I believe, an important place in this instruction. It looks like an English saddle, with high rolls over pommel and cantle, so that the rider, when seated, assumes at once the correct position. The rolls are not absolutely rigid; they are soft to the touch like a well-made cushion but they do hold the leg from the thigh to the knee in the correct position and give the rider a firm hold with his thighs. It seems to be an excellent thing for beginners. It is used for the buckers and for the highly-

trained horses that execute the "Spanish Step." Whether with or without the stirrup, it is said to be a most comfortable, easy seat on the horse.

The English saddle is used in work out of doors, in cross-country riding and the regulation saddle is used in training for squadron work. Each officer, during his year's work, trains a new horse and, at the expiration of his school year, he has the privilege of buying this horse at the price paid for him by the Government. Most officers, I am told, buy their horses and take them back to the regiment. This has a good effect, in that it places in each regiment a standard that others will try to reach and thus all its officers will strive to be well mounted.

In one hall I visited, a class of student officers were receiving instructions from one of the riding instructors. They rode well and did some good jumping. Their hurdles consisted of two uprights of triangular shape, with a moveable bar covered with straw rope or matting to protect the horses' knees should they strike it. There were also brush hurdles and hurdles the height of which could be increased up to five feet by means of a movable bar. In observing these horses it was apparent to me that the horse was better trained than the rider. It looked as though the horse was just taught to jump without the man till he could jump well, then the man was put on, for the horse was sometimes jerked by the rider after the hurdle was cleared. On the whole, it was very creditable; it showed careful instruction, and from the lively manner they rode and jumped their horses one hour's work was enough, for their horses were usually quite warmed up at the end of the lesson.

At a signal that the drill was over, the stable men entered, carefully blanketed the horses and led them away to be groomed and to have their equipments cleaned. All metal parts are steel; the saddles showed great care and bits and curb-chains shone like silver. At the conclusion of this drill I visited another hall, where there was a class of six officers and eight non-commissioned officers riding buckers, using the Louis XIV saddle. They rode about individually, jumping at everything in sight. They would stop short from a trot, rise as if to rear, come down, break into a trot at once, then stop and kick to the rear when struck with the whip. They were strong buckers and the riders were well jarred by their antics. It showed good riding, for no stirrups were used.

After the regular school work in the hall was completed, I

saw an exhibition of horsemanship given by the riding-school instructors, mounted on thoroughbreds, and using the Louis XIV saddle, one major, four captains and eight lieutenants. The horses were put through the various gaits, and they passaged around the hall, after which all began the "Spanish Step" and kept it up for some time.

I must remark that the stables were very good and an inspection of the horses showed them well groomed and well cared for.

Besides having a good horse there are two other requisites to good riding. First, the horse must be properly shod, and next, he must have a strong saddle that fits his back and fits the rider. This is provided for at Saumur, in having a school of instruction for farriers, which is attended by one man from each squadron in the service, and a saddle manufactory that supplies all the regulation saddles to the army. They are not finished but are sent to the regiment where they are completed by the saddlers of the various squadrons.

The school of instruction for farriers is under the direction of a major of cavalry. He first took me to a large room that contained samples of all the horse shoes used in the world, from the time of the Romans to the present day, a very suitable exhibit for such a school. He had plaster casts of hoofs shod with the regulation shoes and many hoofs cleaned, shod and unshod, to show the students by actual observation the thickness of the wall of the hoof, the directions of the nails to hold the shoe, the frog, sole, etc.

In the workshops, a non-commissioned officer stood at each anvil directing the student, and another superintended the horses being shod with the shoes fitted at the anvil. All shoes used at Saumur are made by hand at the factory by the farrier students, and when their six months' course is completed, they must know everything connected with the proper shoeing of the normal hoof. I also saw the different kinds of shoes intended to correct deformities and injuries.

In the saddle factory I watched the making of the saddle, from the sawing out of the tree to the covering with leather, all done by hand by the saddlers under instruction. When they complete their course they, too, return to their squadron with a knowledge of saddlery that can be gained in no other way. In both these schools of instruction I was struck with the earnestness and real interest displayed by the workmen.

They went at it as if they were in love with their work. It was not a drill for them, it was a trade; and after leaving the army, these men go back to their homes, and thus in France at any little country town you can find a blacksmith that can shoe your horse and shoe him properly. The influence of Saumur is thus spread throughout the nation to the benefit of both man and his most useful animal, the horse.

The veterinary school is another feature of Saumur; their instruction is by lecture, and after the examinations at the end of the year, the one taking the highest standing has his name inscribed on the roll of honor in the lecture-room. Connected with this veterinary school is a small botanical garden where all kinds of food grasses are grown as well as herbs used in the treatment of sick horses, an excellent and practical idea, for nothing can be better for sick horses than nature's own remedies.

The fencing school is on the order of the West Point school, but I believe they do more of it here. The school for military telegraphers is the same as our signal-corps school except that it is the cavalry branch here. Our signal corps perform all those duties, and I cannot see the advantage of burdening the cavalry with this kind of work. In the cavalry-advance guard the information obtained will be brought to the rear by courier and transmitted by the signal detachment that should accompany it.

Saumur is inspiring to a cavalryman; he feels he is in the midst of horse soldiers and such an institution must infuse great spirit into cavalry and artillery. The work done there is real, the student is not tied down to books, he does his work in the hall and out of doors and the only study for him is his horse and himself.

German Riding-School at Hanover, Germany.—Hanover, the seat of the great German officers' riding institute, is on the main line of railroad between Cologne and Berlin. I had letters to several officers at Berlin, but none to those at Hanover, and not wishing to retrace my steps I stopped at Hanover, trusting to American politeness and ingenuity to gain admission to this school. I first sought the American consul, Mr. White, a very bright young man, and found he had many friends among the officers there. I made myself known and he very kindly arranged for me to visit the school with him next morning.

Through the courtesy of Captain Westfeld, the head of this

riding-school, I first visited the hall in which he gave instructions. His work was mostly in *haute école* teaching the "Spanish Step." He exhibited several highly trained horses and it was remarkable to observe the change in these horses the moment they were mounted by their riders.

The horses, as they were led in, did not impress one as being such fine animals; they were well formed, had strong legs, but heads were apparently heavy on some, yet the instant the rider was in the saddle the change was marvelous. From the mild-looking family riding horse with saddle he became the prancing steed of the warrior, the eyes brightened, the springy step in *haute école* riding lifted horse and rider as if on wings, and as the feet touched the ground it seemed as if they pushed the earth from them, as though they spurned to remain long in contact with it. It was beautiful; no punishment, no effort, these highly-trained animals knew their work.

All general officers, I am told, get their horses from this school, and they must present a fine appearance on review. Upon closer examination of these horses I observed the wonderful development of the leg and back muscles. This is done by a regular setting-up exercise taught the horse, and which was shown me by the polite captain. He mounted his horse, and at a signal the horse first raised one front and the diagonally opposite hind leg, then put them down and raised the other front and hind legs as fast as a horse would trot at a slow trot. This was new to me, it was the gymnastics of horse training and it brought into action all the muscles used by the horse while in motion. Notwithstanding all this high-school training these horses did not lose their simpler gaits, but took them easily and gracefully at the will of the rider.

A class of student officers, fourteen in number, then entered for their lesson of one hour. They mounted and rode at will, jumping hurdles, trotting, passaging, changing step and performing all the difficult feats in horsemanship. Their work was quite like the French school, and the earnest way in which they went about it showed the deep interest they took. Other halls were also filled with student officers working with new horses, some of which were Irish hunters. This horse seemed to be preferred all over Europe for cross-country work especially.

The riding halls and stables at Hanover are built around a rectangle and the enclosure thus formed is used as an outdoor

riding-school. Sand covers the surface of this exercise ground to a depth of about six inches, making a soft footing for the horses. In this school were twenty-four officers from the various regiments, all superbly mounted and riding at various gaits. No instructor was present, but all were at work taking jumps, hurdles and ditches as if they liked it. It was raining slightly the morning I was there, but that did not deter these Germans in their fine uniforms; they splashed through muddy places riding at their jumps, slipping now and then, but always returning to it if unsuccessful the first time.

It was admirable to see the enthusiasm shown by these young officers in their work. It was apparent that some were not good horsemen, but they were cavalrymen at heart and worked with a persistency that would make them good riders in the end.

An examination of their stables and saddlery showed the same careful attention to stable management and equipments, so noticeable in the French school. The German officers at this school do a great deal of cross-country work, hunting the wild boar. These animals are bred for this sport and set free at a certain point, where the dogs can begin the chase. I saw the kennels where the packs were kept, the dogs were like the fox-hound used in Virginia, were nicely housed and in good running trim. The stag is also hunted here in a similar manner. These student officers do nothing but ride; they have a recitation one day in the week in tactics, but that is all. This seems to be a good plan, as it puts all the man's thought on the *main object* of this school, viz.: the "art of riding the horse."

Neither the German nor the French are natural riders; they are not as a class brought up from their youth like the English and many Americans, used to riding from childhood, but they have recognized their deficiency and have both made great strides in overcoming it. Such schools as the German school at Hanover must produce a class of riders second to none in the world. This school keeps alive and disseminates the knowledge of equestrianism that would otherwise be lost among a people who, as a rule, have come to employ other means of transportation beside the saddle-horse.

Austrian Cavalry School, Vienna.—From Hanover I went to Berlin; I have already described the German cavalry seen there. The next school visited was the Austrian officers' riding-school at Vienna.

The officers attending the school are quartered in what was formerly a Catholic convent; it is a fine, substantial building, but it was evident that it was intended for other purposes.

An officer met me at the school at 8.00 A. M. and we proceeded at once to the riding halls. There are three halls here, none of them as large as that at West Point, nor do I believe large halls are desirable. Smaller halls, it is true, limit the number of men in the class, but it is not possible for thorough instruction to be given the riders when a class exceeds twelve or fourteen members.

In the first hall there were fourteen young officers riding new horses that were being trained. They were riding English saddles and used the snaffle-bit only. They rode about at various gaits without interference, the instructor criticizing them freely. The riding-master was dismounted and stood about the center of the hall, carefully watching each horse and rider as he passed a certain point. Sometimes, if a horse was not acting to suit him, he would dismount the officer, mount himself, and show the student how it should be done properly.

In the second hall visited, the instructor was giving commands in a moderate tone of voice; the horses in this hall were better trained and took to their work beautifully. They passaged, changed step at a walk, trot and canter, and while all obeyed the commands of the instructor, each horse was working individually, under the signal of his rider, and would leave the column, trot out, turn around, go forward and go backward, without any hesitancy. It was truly a fine exhibition of a perfectly trained animal, that among so many horses going in different directions each horse attended to his own work, was not influenced by what the others did, but waited for and acted upon the indications of his rider.

These officers ride five hours a day and as many horses, for after one hour's work of this kind a horse needs rest and rubbing down. The instructors are on duty for the same length of time daily.

The third hall was similar to the first and contained fourteen student officers. The major-general commanding, a man of about forty-five, was in this hall riding a young horse which he was training. He moved among his lieutenants, devoting all his attention to his work of training that horse, and had he not been pointed out to me, I would not have known that he was not receiving instruction the same as the other officers. At

the conclusion of this drill he came to the gallery; I was introduced to him. He kindly welcomed me to Vienna and to the riding-school, and made some kind remarks about American officers.

After visiting the riding halls I went through the stables and saw with what excellent horses this school is provided. Most of them are bred at the Government studs, and an officer has the privilege of buying one from his squadron, if he so desires, on leaving the school. These horses are carefully attended, and one black stallion, valued at $1,000, a fine animal showing much life, was as tractable as a kitten. The groom moved around him in his work with perfect ease and yet, to see that animal in his box stall, one would conclude that he was vicious. The grooms are all old soldiers who receive extra pay from the officers for their work.

Saddles and bridles are kept beautifully; the horses, blanketed as soon as the exercise in the hall is over, are led about at a walk until cool, when they are taken to the stables and groomed. The Austrian stables are very well built, well lighted and well ventilated; they also keep a horse knee deep in straw all the time. Their manner of tying a horse while being groomed, with a rein from each side of the halter and sometimes one from the nose-band, is very good. Their halters fit better than ours. The grooms, on bringing the horses to the riding halls, were in neat uniform and were under the charge of a non-commissioned officer, armed with a saber. From May till September, every year, the officers at the school have wild boar and stag hunting.

While the Irish hunter is seen here, as he is all over Europe, and for endurance, weight-carrying and jumping required in cross-country work cannot be excelled, the Austrians have a horse which for all-around cavalry work seems ideal. He is known as the Hungarian horse. He is a well-made, graceful animal, average height about sixteen hands. The Hungarian is a horseman from birth, and it is from Hungary that both the best horses and riders of the Austrian cavalry come.

The student class in Austria, at the end of a year, are examined and arranged according to their riding. The students of the lower half are returned to their regiments, while the other half is retained at the school for a second year of instruction. These officers on returning to their regiments are made regimental riding instructors. At this school I noticed one

officer from the Spanish Army. At the German riding-school I saw an officer from Sweden. A course at any of these schools would be regarded as a reward by an officer of any army.

Italy.—My arrival in Italy was too late to observe the cavalry officers' school, where the daring feats of horsemanship, such as climbing and descending almost straight walls, are taught.

BATTLE-FIELDS

My visits to the battle-fields mentioned above were most interesting and instructive. Possessing maps showing the positions of the different armies, the artillery positions in the line of battle, the reserves as well as the line of attack, the point of rupture and the flanks turned, I was able to take in the plans of both armies and to see the advantage of the one and the defects of the other. Visiting decisive battle-fields is a most satisfactory and beneficial occupation for the student of the military art. Plans on paper, even when the contour lines show the conformation of the terrain, are never as clear nor so convincing as when one is on the ground. A knowledge of ground is of great importance in battle, and the past masters in the art of war were experts. It is said that no man ever studied the enemy's position and his own, as to the ground, as did the great Napoleon.

UNIFORM. OFFICERS.

Officers in all Continental armies are seen daily in the cities in uniform, and their dress and appearance is a subject of favorable comment by all. One reason for their fine appearance is that it is customary for officers to reserve one complete outfit, the best, for street purposes, and when they appear they give the impression that they have just donned a new uniform. Another reason is that, there being so many officers in European cities, military tailoring is made a specialty and catered to by many tailoring establishments. There does not appear to be very much difference in the cut and make of the garments in the different armies, it is the cloth, its color and the head-dress that make them appear different. Any articles of uniform, both for officers and enlisted men, are quite similar to our own. I shall merely touch on those that seem to be preferable to ours.

Officer's Cape.—This garment, used in the German, Austrian and Italian armies, consists of a long full cape, reaching almost to the shoe top and held at the neck by a metal clasp. It is worn dismounted, and in cold weather completely envelopes the wearer, yet is so loose and free about the legs as not to impede walking. It has another advantage in the field in that it serves as an excellent protection during the day in sudden changes of weather and at night serves well as a blanket.

Cap.—The Germans, English and Russians wear a cap similar to our own, but with a slight modification of visor and the bell of the crown. The Italian officer possesses the neatest and most soldierly looking cap in Europe. In shape it resembles the cap worn by the Union Army during the Civil War, except that the crown is held in shape and up off the head; the top of the cap is slightly smaller than the crown and the visor droops well to the front, giving excellent protection to the eyes.

The band of the cap indicated the rank of the wearer at once and could be distinguished easily when the observer, was within fifty yards of him. This seems to be most desirable, as the collar ornament, the sleeve ornament and shoulder-strap are often covered up when an officer on horseback wears an overcoat, but by his cap his rank is proclaimed at all times.

Riding Boots.—In observing students at the various riding-schools, the footwear seemed to shine so brightly that without closer inspection I concluded that the boots were made of patent leather, but I was mistaken. The boots of all cavalry officers are of calfskin, made to order to fit the foot and the calf of the leg. The leg of the boot is not stiff like ours, but is soft and pliable, and is held up on the leg by its close fit and by a little loop from the inside that is fastened to a button on the riding breeches just back of the knee. It was almost what we would call a jockey's boot, but had a rather high heel and, of course, was of black leather throughout. The boot was soft as a glove, fitted closely without binding any part, and looked both elegant and comfortable. The patent-leather appearance was put there by the officers' servants, who, by placing boot-trees in the boots, then go over the entire boot with a tooth-brush handle till it is smooth, and then shine it with brush and cloth. I have never seen a body of mounted officers dressed in better taste as to footwear than the students at these cavalry schools.

Italian Walking Shoe.—The most serviceable and most sensible footwear for infantry, in my judgment, is worn by the Italian infantry, by both officers and men. It is a lace shoe, whose upper reaches almost half way between the ankle and the knee. The trousers are cut to fit the leg and reach almost to the ankle with buttons to fasten on the side. The shoe top fits close over the trousers and does not permit sand, mud or water to enter.

The shoe itself is strong, but not heavy. The sole is of good, heavy, oak-tanned leather, slightly thicker than the ordinary walking shoes, the upper of soft pliable leather that fits the wearer without wrinkling into bunches that gnaw the foot and cripple the wearer, no leggings or puttees; it was serviceable, durable, as water and sand tight as a shoe can be made, it could be put on and taken off easily and quickly. It served all the purposes of a top boot or a shoe and legging and has none of the disadvantages of either; to my mind it solves the question of footwear for the soldier, mounted or dismounted.

Before leaving the subject of officers' uniform I desire to merely mention the prime reasons for the neat, soldierly, I might say, elegant appearance of the foreign officer. It is because in all foreign armies every officer is allowed to select a personal servant from the organization with which he is serving to whom he pays a small sum extra, and this servant, usually an old soldier, looks after that officer's clothes, his horse and equipments. His servant goes with him in the field and looks after him there the same way, packs his kit and unpacks it, leaving the officer free from the petty annoyance of looking after such details that would distract him from his more important work.

His governments recognizes that most officers cannot afford a servant, as can the gentleman of his same social station in civil life, and it supplies a means by which its officers can be provided and cared for as gentlemen in their station should. It permits the officers to procure a servant at a reasonable price to do a servant's work and leaves him free to do an officer's work that the government expects him to perform and not to use his time doing the work of a menial. It stands to reason that the well-dressed, well-cared-for officer, the one freed from the petty annoyance of dirty equipments, badly-brushed clothes and boots, poorly-groomed horse, etc., is infinitely better fitted to do an officer's work than the one who

is not so well cared for, and it is true of the American Army officer more than any other, that he cannot procure a servant from among his soldiers to perform these services without incurring the displeasure of the authorities and the criticism of the inspector.

It may be said that soldier servants (strikers) are allowed in the United States Army, but it is not authorized, and the life of the average American officer in garrison and field is often rendered unhappy by having to perform some work quite beneath his position as an officer and a gentleman and which should be performed by his servant. The average officer cannot afford to pay a man servant twenty to twenty-five dollars a month and board him, and as a result, our officers do not present the neat, soldierly appearance of their brother officers abroad.

In our army strikers are tolerated, but must attend all drills, guard and other duties and a soldier's time to-day is so fully occupied with his duties that the time left to wait on an officer is extremely limited. In the field, the captain, as a rule, forgets the orders from the War Department and has a striker for himself and his lieutenants may have one also if the captain is kind, but unfortunately he is not always kind and quotes regulations for everybody but himself. Majors, colonels and even generals in our army are often dependent on the kindness of some captain to provide someone to perform the work of a servant in the field.

The necessity is apparent that the American officer should have the privilege of selecting a servant from the ranks. Why not meet it in a manly, dignified way, recognize it and provide for it? It would not be excessive to increase the enlisted force in each troop or company by three for this purpose, as the number of officers on duty with a regiment is rarely over thirty-six.

ENLISTED MEN'S UNIFORM.

The overcoat worn by the English and German soldiers is quite like the one recently adopted by the United States Army with this difference, that theirs has a plait down the back which acts like the bellows tongue of a shoe. When the garment is being worn, the surplus cloth in the back hangs in this plait or fold, is pressed so that it lies smoothly and is held in place by the half belt in rear. At night, when the soldier gets into camp

and he wishes to sleep comfortably he opens this belt and his overcoat serves as a blanket to be thrown over him. He may sleep in his clothes and by having this ample coat, capable of being made loose around the waist, he can sleep comfortably in it without removing it. In the morning, the coat being on, it is belted back as before. In this way the German and English coats appear to have the advantage over ours. In the French, Austrian and Italian Armies, they wear a coat similar to our old blue coat formerly worn by our enlisted men.

Fatigue Cab for Soldiers.—There are many kinds of headgear for use on the drill grounds, at stables, on shipboard—in fact, almost every place except in the field. The simplest, cheapest and least objectionable is worn by the Germans and looks like a polo cap. It is made of cloth, without visor, is perfectly round, about the depth of our present cap, but the side is straight, the crown is flat. The objection is at once raised to the absence of the visor, but many kinds of headdress, among civilized people as well as savages, do not provide shade for the eyes, and yet are desirable. Such a cap has many uses in service, is cheap, very serviceable, can be rolled up and put in the pocket. It looks neat and gives the soldier a smart appearance.

ENLISTED MEN'S APPEARANCE IN STREET.

In general, the enlisted men seen in the streets of the towns and cities of Ireland, England, Germany and Belgium were neat in appearance, soldierly in their bearing, but, above all, their clothes fitted them and they were the objects of admiration and the pride of their countrymen. The reason for this I found to be that their clothes were made at their station by troop or company tailors. It costs no more to have clothes made to fit them than it does to have clothes that are ill-fitting. These armies know that, and while some clothes used are ready-made, the uniform for street wear and for dress and full-dress occasions is made to fit the man. The effect on the appearance of an organization so clothed is apparent.

Another point quite as important as the well-made uniform is the care of it. In inspecting the barracks of a cuirassier regiment in Berlin, I noticed very few clothes in the squad rooms and what I did see were worn and soiled. Upon inquiry, I found that the best uniforms were kept in a large room, arranged like the cloak-room of a theater. Each soldier had

his peg; the room was under the charge of a non-commissioned officer, like the company quartermaster-sergeant and when a full-dress uniform was ordered, each soldier came to the window, got his nice uniform, and those articles of his equipment for full dress, went to his squad room and put them on. When the ceremony or drill was over he brushed his clothes, brought them back and handed them in to the sergeant, who is responsible for them while in his keeping.

The tailor shop was near, and any necessary pressing or mending was done there. Clothes were inspected by this sergeant, so that whenever that organization turned out it was uniformed according to orders, with handsome, well-fitting garments. The same course is pursued when a soldier goes on pass. He presents his pass to the quartermaster-sergeant who is authorized to give him his good uniform for use while on pass. After he is clothed in it, he presents himself to the officer or non-commissioned officer of the guard for inspection, and if properly dressed is allowed to depart. On his return from pass, he again presents himself for inspection, then returns to his squad room, changes his clothes and deposits his good uniform with the quartermaster-sergeant for safe keeping.

There are many advantages of this system. It keeps the clothes in a large airy room, where they are not crushed out of shape; they are free from dust, they are always subject to inspection, always ready for instant use. It prevents soldiers from accumulating a large amount of indifferent or poor uniforms and above all, it does away with the necessity for crowding the squad rooms with closets, the size of which in our service is gradually increasing, till it will soon be out of all proportion to what a soldier should really require.

FIELD MUSIC.

The field music of our infantry regiments is a simple thing, as the musicians use the bugle only. In both the English and German Armies these musicians are taught to use the fife and drum for music and the bugle for calls. This is an improvement, for there is no more martial music than the fife and drum; every soldier likes it and it improves the marching of the troops that possess it. The West Point corps of cadets, probably the most faultless marchers in the world as to step, carriage, steadiness and general bearing, are so as a result of their

marching three times a day, to and from the mess hall, to the music of the fife and drum, during the summer encampment.

The bugle alone, as we have it, is hideous for marching music; it is not music, and perfect time, necessary for soldiers to keep step, is almost never attained. Let the musicians of a company retain the bugle for calls, but give one a fife and the other a drum and the difference in the marching of a command in one year will be apparent. The effect of a fife and drum on tired and jaded troops toward the end of a long march is well known. We cannot afford to neglect these little points that inspire so much spirit, life and dash in the soldiers in peace, but especially in war.

A German drum corps, as seen with one of their infantry regiments, or the bagpipes of the Coldstream Guards, accompanied by drums, seen in London, the instant they strike up put a change in the appearance and step of the men in ranks that nothing else can.

HORSES OF FOREIGN COUNTRIES, THEIR TRAINING. RECRUIT HORSES. RECRUIT MEN.

It is a pleasure to a cavalryman to visit England to see the horses used in the mounted service there. The English are horselovers, and from the King to the cabman they seem to understand the horse better than any other race of civilized people. The horse in England is an educated animal; his breeding is carefully looked after, his training is their recreation, his care is their first duty, after caring for themselves. The result is that the saddle-horse is found there in large numbers, riding is more general than anywhere else, and hence the cavalry service can secure horses better suited to its requirements than can be found in most other countries.

The grooming and care of horses seems better understood in England, the shoeing is more satisfactory and the English horse, like the English gentleman, presents a high-toned, well-fed, well-dressed appearance. The horses at the riding-schools of Europe are exceptional; they are carefully educated for that particular work, are higher priced than the troop horse and belong to the first-class saddlers.

The troop horses of France were not exceptional in appearance nor training; those I saw in the German cavalry showed a vast amount of training. The Austrian horses, mostly from Hungary, are very desirable mounts. To be a hussar is the

highest ambition of the Hungarian soldier, and instead of trying to avoid the greater amount of work in the cavalry, the soldiers from Hungary exert themselves to be assigned to the cavalry during their service with the colors.

The Italians have no special type, but there is a large sprinkling of Arabian horses in their army. Their horses are smaller than most horses used in European armies, but they are well suited for the mountainous work in Italy.

One point noticeable in the training of cavalry abroad, and one that should be impressed on every officer who attempts to train men for mounted service, is that the horse and man are trained separately.

The horse is taken as a recruit horse, placed in the hands of experienced non-commissioned officers and privates and is trained in his gaits, turnings, head bendings, etc. This training is continued till he moves through the drill with the precision and steadiness of the older squadron horses. He is then placed in the squadron and has a rider assigned.

The recruit cavalry soldier, after his dismounted drill and his instruction on the wooden horse, is taken to the riding-hall or ring and is mounted on a well-trained, tractable animal. He is then taught his position, manner of holding reins, lance and saber mounted, and while on this trained animal, he can pay all his attention to his own training and is not distracted by an unruly, untrained, untamed horse. This gives him confidence in horse-flesh at once, it wins him to the mounted service; he likes his horse, he likes the confidence this horse exhibits, and at once he recognizes the capabilities of an animal trained for the cavalry service.

After he has ridden this animal for some time, after he has acquired a knowledge of the aids to horsemanship, he is then ready to handle horses not so well trained and to bring them up to the standard of his first mount, which for more reasons than one should be perfectly trained.

The common sense of such a system appeals to you at once; you save time in training both horse and man, and in the end you have both better trained in their required duties.

Stable Appointments.—In the stables of Europe they have the odd custom of keeping the bedding under the horse all the time. This is not a peculiarity of one country, they do it in all. Their horses, as a rule, appear to be well cared for and the shoeing, especially in France, was exceptionally good. They

do not have picket or standing lines for grooming, but in fine weather they are tied on the sides of the stables.

I noticed several good devices in their stable arrangements which might well be adopted by us; for instance, the French have a way of tying their horses so that each horse can reach his own feed and cannot interfere with his neighbor, at the same time the horse can lie down at ease and still not have so long a strap or chain that there is danger of his being entangled. It consists of an iron rod attached just at the feed box or the manger and reaching to the floor where the second attachment is made. The bar is close to the manger, but enough space is left between it and the manger to allow a ring to slip freely. To this ring is a short chain, which is fastened to the halter, giving the horse enough freedom to feed properly and to lie down, but he cannot reach the feed boxes of his neighbors.

Another good device used by the French also, was a large double hook on the top of each heel post for saddle, bridle and equipment, when the soldier is saddling or unsaddling. This hook is high enough to make it impossible for horses to injure themselves.

Another ingenious device, and still a simple one, was a saddle rack or rest countersunk into the heel post. When needed it was lifted up, and a diagonal support that caught in a socket sustained it. When not needed it was dropped into place.

The horse blankets used were clean and evidently are washed very often. The saddles and bridles were in excellent condition and the steel bits shone like silver. If they can keep their bits so clean the American soldier can do the same, and I believe the steel bit superior to the nickel-plated or tinned. The only advantage of the latter is that it saves time for the soldier, but his horse equipment is not nearly so neat.. I attribute the cleanliness of their equipments to the custom they have of requiring the soldier, upon the completion of each drill or exercise, to clean the equipments used on that duty.

Riding Halls.—The English, French, Germans and Austrians recognize the great benefit obtained by constant and systematic training of the horse. To do this without interruption, shelter is necessary and numerous riding halls have been provided. These halls are not large, as a rule, and for a reason. They do not contemplate that they should be large enough for a troop or squadron drill, they are satisfied if they accommodate a platoon or less, and believe that twelve or fourteen new horses

can occupy the attention of one instructor with better results than by crowding the hall with a larger number.

In addition to their riding halls, they have riding circles and rectangular enclosures for out-of-door work, not large, but of sufficient extent for twelve horses to be exercised at once. The instructor, dismounted, stands in the center and devotes his whole attention to the men and horses under instruction.

These provisions, the riding halls and the out-of-door enclosures, merit our serious consideration, Large halls are not a necessity. The cost of construction is not great, but the results obtained are striking. In large posts there should be one hall, at least, for every squadron of cavalry or battalion of field-artillery.

OFFICERS' RIDING-SCHOOLS.

The one crying need in our service that impresses itself vividly upon the American cavalry officer traveling abroad is our lack of an officers' riding-school. This is also apparent in the inspection of any of the cavalry regiments and its want is more strongly evident in the lack of training of our cavalry horses.

Let us take, for instance, the West Point cadet, the average graduate, who, prior to his service as a cadet, has seen little if any horseback riding and has received no instruction whatever. in the art of training horses. Upon graduation he is expected to pass to the regiment and be ready to instruct recruits in the difficult accomplishment of training horses for the cavalry service.

No man is born a horseman; men become horsemen by study and close contact with a horse. The cadet learns little about a horse at West Point because he has no time to go into the subject deeply; if he manages to ride well by his first-class year he is proud of the accomplishment, but his knowledge of horse, saddle, bits and bitting is quite meager.

The need of a course of instruction in this most important part of a mounted officer's education in the United States Army is apparent, and by supplying it the results will be far-reaching.

I do not regard it necessary to follow blindly the courses laid down in foreign schools, especially that part relating to the training of fancy-stepping horses, or the excessive coursing or cross-country riding practiced there. I do believe in a ten-months' course of instruction for every cadet before he

joins the mounted service and at least one officer from each regiment and two, if possible, for the same period. I further believe that the course should be for riding and riding alone. I would limit the theoretical instruction to lectures once a week by riding-masters, but let everything else be practical. A knowledge of the horse, how to train and ride him, is what is desired, and while I do not despise the valuable works written on the subjects, the book should be secondary. A practical illustration by a riding-master to a class of say, fourteen officers, with a freedom to ask questions, is worth more than days of book reading.

Let these officers ride not less than five hours a day, good hard work; let them be taught how to ride the English and McClellan saddle, the proper bitting of horses and the manner of training mounts so that they will be useful to the mounted soldier. The whole secret of efficient cavalry is the horse, for without the horse, the properly trained horse, you have no cavalry.

I recommend that such a school be established, and that it be placed far enough south to permit out-of-door work, if possible, the whole year round. I would place it near a large city, so that it would be a desirable place for young officers for station. I would offer some reward to the first five officers in each class, who, on the completion of their course, were declared by the board of instructors to be the most proficient in practical horsemanship.

Let these officers return to their regiments, and after five years the effect of this school would be quite apparent in the mounted service of our army. We will have officers who are better riders, enlisted men who are better instructed in riding, the class of horses ridden by officers will improve, the training of the troop horses will be more thorough and we will be creating a class of horsemen who will eventually buy all the cavalry and artillery horses for the services because of their acknowledged ability to judge horse-flesh, and in the end, the breeding of better saddle-horses in our country will receive a great impetus. Thus the benefits derived from an officers' riding-school must not be viewed from the narrow standpoint of the military service only; we must comprehend the ultimate effect it will have on our country in general.

MILITARY ATTACHES.

While in England, France, Germany, Austria and Italy, I called upon the military attachés at the several embassies in those countries. It is unnecessary to refer to them in any other connection than the position they occupy with respect to the attachés of other countries.

While our officers accredited to other countries, are, as a rule, men of greater experience and more years of service, they are very inferior in rank to the attachés of other nations serving with them and are always placed below those officers at official and social functions. While this is of little moment to the ordinary civilian in our country, it is looked upon quite otherwise in Europe, where a man's reception, his standing and his treatment depend in great measure upon his rank.

Another serious drawback to their position is that the expenses of an attaché who properly carries on the duties of that position are more than he can afford on his present salary as an army officer. All those at the European capitals are captains, with one exception, where a major occupies the place, and even a major's pay is not sufficient. The American officer detailed for this important work should be a picked officer, noted for his professional ability, his zeal, his appearance, his affability and his tact. To use a common expression, he should be "a good mixer," one who is at ease under all circumstances, a good fellow and one who has the charm of making friends with all whom he meets. Such a man not only reflects credit on his government, but he is able, because of his graceful, easy, approachable methods, to reach people in a perfectly proper way and obtain much information that is often lost, or that requires the laborious, time-consuming method of routine application through high officials, which often results in a refusal.

Unfortunately, officers possessing these rare combinations of traits are generally limited as to their income to the bare monthly pay of their rank; they cannot afford such an expensive assignment. As a result, the indispensable condition to the selection is that the officer shall have an income outside of his regular pay. This brings the detail in our army within very narrow limits and rarely includes the bright, ambitious, energetic workers that would do most credit to the position.

It seems to be good government and good policy to have

the most capable officers in these positions, and it does not seem unreasonable to ask that, when men are detailed as military attachés to embassies, that they have the rank and pay of colonels. In addition to the above, each officer should have a clerk and an interpreter to keep up with the current work of the military life of these nations and not be held down to a typewriter, when they should be out observing military matters.

Such provisions would give our attaché abroad the position and the means that the military representative of our great nation should possess. He can take the place that should be his, he can be the companion of colonels and generals, men of his own age and about the same years of service. He will be as much sought after by them for information as they will by him, for the simple reason that his rank and appearance stamp him as high authority on American military affairs. The advantages that will be gained by us should not be measured by the temporary rank and pay granted to the officer.

Another and a quite important consideration is the length of time that attachés should remain at these embassies. It must be remembered that at all the Continental courts, the officer must, as a rule, learn one foreign language and two are better. Under the present system of four-years' detail, he just about becomes proficient in the use of this new tongue when his time is up. The new incumbent has to begin all over again and he in turn goes home when he is in a condition to render the best service to his government.

A second consideration, by no means unimportant, is that it takes an American officer two or three years to become well acquainted with foreign officers and familiar with their ways of doing business. There are many ways of getting information, but it takes time to learn the expedients in acquiring it. The officer, after three years, knows most of these ways and is in a position to conduct his work in an efficient manner and why not make the length of his detail depend upon the kind of service he does his government. Let it be known that his recall depends upon his efficiency and make it so.

When an officer does demonstrate that he is valuable in that particular position, keep him there as long as possible. Military information of other countries is what we want; we must know the pace at which they are moving, or we will be languishing in false security. When we have a man that gives us that

information, that keeps up to date in everything military, he can well be spared from other duties even for a long period. Keep the round pegs in round holes, for it takes time to wear the corners off square ones to make them fit smoothly, and time is everyth ng nowadays. I know of one attaché in Paris who has been kept there by his government seventeen years; he is an expert in ordnance and has invented valuable guns. The work of such a man is priceless.

DETAIL OF OFFICERS WITH FOREIGN ARMIES.

I noticed in all the Continental armies that there were officers of foreign countries serving therein. I learned that through the courtesy of the various governments officers from other countries came to serve in these regiments for instruction. It would enable us to learn more of the actual work of foreign armies if we had some of our officers serving therein for a period of one or two years, could such permission be obtained.

Some years ago, the late Lieut. P. H. Clark, Tenth Cavalry, did serve in one of the German Uhlan regiments, but I have never heard of another American officer having that privilege. Should it be possible to get permission to do so, it would be beneficial to send these officers, one of each of the arms of the service, to the armies of the six great powers of Europe. Let them remain there two years, then send three more. These men would learn more than in any other way, and the chance to secure one of these details means a chance to learn a foreign language, which would be eagerly sought by promising officers. Such details might be held out as a reward for high standing in the practical schools in our service.

GENERAL REMARKS ON THE ENCOURAGEMENT OF OFFICERS TO GO ABROAD.

It is surprising to know the vast amount of military knowledge the ordinary observer can obtain by a visit to Europe, while for a military man the field is limited only by the time he has to spend there. France and Germany are the storehouses of military relics, histories and maps, while all over Europe are scattered the fields of decisive battles.

The American officer who goes abroad cannot help comparing what he sees there with his own; he unconsciously decides on which is the better and, if it is theirs, he resolves to remember it and introduce it into our own army, if practicable.

It is in Europe that we see large armies such as those used in war and where they make military work a serious business. Possessed of some letters of introduction, or by seeing the attachés, permission can be obtained to visit most of the foreign armies and to observe their drills.

The officer who spends his time in observing European methods, or in acquiring a foreign language, should receive some encouragement from his government, for it gives him knowledge of professional value that can be acquired in no other way. It makes him familiar with the officers and soldiers of those countries, he finds out their standards, and can judge fairly well their value in war. Above all, he learns their methods of training young men, so necessary in the event of war in this country, where large numbers of untrained men must be called to the colors on short notice, with little or no time for instruction.

Officers on leave should be offered inducements to go abroad; it takes them out of their narrow army life, it gives them many new ideas and destroys many erroneous ones that they have perhaps gained from reading. In some cases it brings us to a proper appreciation of the soldiers on the other side, and we learn that while our opinion of our own army may be high, we are not in everything the best in the world.

Make it possible, therefore, for officers to see these countries and their armies; in addition to the one month a year on full pay, give them two months provided it is spent abroad for professional advancement, and require detailed reports of their trip. This would give an impetus to officers to go abroad, they would come back with greater interest in their profession and the knowledge gained would materially benefit our army. One visit makes an officer who loves his profession want to make another, for he realizes that Europe is the fountain of mi itary knowledge and a visit to the source keeps him abreast of the advancement made there in his particular arm.

THE OPERATION AND MAINTENANCE OF A RAILROAD IN A THEATER OF WAR.

By Captain W. D. CONNOR, Corps of Engineers.

HAVE no apologies to offer for this subject which is perforce a dry one to think about or to listen to, for it is full of lively interest to the military student of to-day.

To the question How can an army of two corps operate at a distance from its base in a hostile barren country without railway communication? there is only one answer—It cannot.

This artery of supply is vital to the army's existence, and woe to the general and woe to his army if he allows it to be permanently disabled. So great is its importance, that when Kuropatkin was being slowly driven back from the Yalu, it was reported that with only 50,000 men in his field army, he was using 60,000 men to guard the two steel ribbons that stretched away thousands of miles to his rear and on which he based his hopes for reinforcement in men and materials.

THE CIVIL WAR.

The late Civil War in this country was the first war in which railroads were a potent factor. It is true that 30,000 Russian soldiers were moved by rail from Poland to Austria in 1849, and that the Austrians used the railways to concentrate their troops on their northern frontier in 1850 to threaten Prussia. The French and Austrians again used them in 1859, but this war was of such short duration that it did not serve to show the possibilities of this means of transportation.

BULL RUN.

The Civil War practically began with the first battle of Bull Run and the issue of that battle was decided when Johnston's troops arrived on the field. These troops had been in the Shenandoah Valley, opposing General Patterson. They were suddenly withdrawn from the valley and moved by rail to Manassas where they arrived in time to participate in the battle.

ATLANTA CAMPAIGN.

From this time on, the railroads were used as lines of communications wherever they existed, and in many campaigns, such as those in Kentucky, Tennessee and Georgia, the railroads were so absolutely necessary to supply the army that nothing except minor operations occurred off the line of the railroads. With reference to these railroads General Sherman says in his "Memoirs": "The Atlanta campaign would simply have been impossible without the use of railroads from Louisville to Nashville—185 miles—from Nashville to Chattanooga —151 miles and from Chattanooga to Atlanta—137 miles. But as I have recorded that single stem of railroad supplied an army of 100,000 men and 35,000 horses for the period of 196 days, viz.: from May 1 to November 12, 1864. To have delivered that amount of forage and food by ordinary wagons would have required 36,800 wagons, of six mules each, allowing each wagon to have hauled two tons twenty miles a day, a simple impossibility in such roads as existed in that region of country. Therefore I reiterate that the Atlanta campaign was an impossibility without those railroads; and only then because we had the men and means to maintain and defend them, in addition to what were necessary to overcome the enemy."

The largest movement of troops in the Civil War was the movement of Hooker's two corps, the Eleventh and Twelfth, consisting of 23,000 men, from Catlett's Station, Va., to Chattanooga, Tenn., a distance of 1192 miles in seven days. This was followed, in January, 1864, by the movement of Schofield's Army of the Ohio, 15,000 men, from the valley of the Tennessee to Washington, a distance of 1400 miles in eleven days.

THE FRANCO-PRUSSIAN WAR.

But all these performances sank into insignificance, and the scientific use of this powerful aid to an army was for the first time illustrated by the move of the German Army to the Austrian frontier in 1866, and again, on a much greater scale when the German Army invaded France in 1870.

"The great utility of the railways in the Civil War attracted the attention of the military authorities in Europe, and particularly of Marshal von Moltke, Chief of Staff of the Prussian Army. He saw in them the means of getting a decided stra-

tegic advantage by placing the Prussian Army on the frontier before any possible adversary, thus to overwhelm him before he was ready to attack. After years of study and with the experience gained in the Austrian War of 1866 he was able to make the marvelous concentration of 1870 which has commanded the admiration and wonder of every military student.

"Between the 23d of July and the 9th of August, 456,000 officers and men, 135,000 horses and 14,000 guns and other carriages were transported from the different provinces of the North German Confederation to and beyond the Rhine River, and in such a thorough state of preparation that hostilities were begun by invading the enemy territory even before the last contingent had arrived. Only six trunk lines were employed in this movement which required 1205 trains; most of the lines were only single track roads. The difficulties involved in perfecting the plan for this movement become even more evident when it is remembered that at the outbreak of the Franco-German War the railways of North Germany numbered ninety-five independent lines controlled by nineteen independent states and forty-five private corporations.

"Without wholly stopping their private business, it was necessary to unite them in a plan by which nearly half a million of men with supplies should be transported, without unnecessary fatigue or privation, from every station of the North German Confederation to the French frontier.

"It is evident that such a plan required not only the most thorough study of the maps and resources of every road, but also the hearty co-operation of the military and railway authorities. As in the Civil War, the railways captured from the enemy were operated by the military authorities and served to supply the army in its campaign in France. The reinforcements afterward sent to this army to replace losses, etc., numbered 244,000 officers and men, 22,000 horses and 116 field-guns. The prisoners sent to the rear numbered 384,000 and the sick and wounded 240,000."

RAILROADS BUILT SINCE FRANCO-PRUSSIAN WAR.

"Since the Franco-Prussian War the military authorities of every European country have devoted much time to the study of the railway-transportation problem in war. Military railroads have been constructed to supplement the civil lines where these do not suffice for the prompt movement of

troops. The German problem is much simpler than it was in 1870. Sixteen through lines connect the German territory with the Rhine and cross that stream on iron bridges. Double track railways follow both banks of the stream. Eight lines penetrate Lorraine and are united into five lines at the frontier. Seven lines lead from the Rhine to the Vosges Mountains in the province of Alsace. Practically all the railroads are owned and operated by the State. In 1870 France found her lines defective from the fact that they all passed through Paris; now she has practically an independent through line from each army corps district to the frontier*."

THE EGYPTIAN CAMPAIGN.

The use of the railroad that General Kitchener made in Egypt in 1897–8 illustrates the fact that a railroad is sometimes so necessary that one must be constructed in the field to render the completion of the campaign a possibility. On this campaign the water and rail transportation practically ended at Wady Halfa, on the upper Nile, and the army was still over four hundred miles from its objective point, Khartoum. The solution of the transport problem by means of camels was out of the question; the cataracts and rapids precluded the possibility of water transportation above Wady Halfa, and a railroad across the desert or along the Nile was the only solution. The route along the Nile was so difficult as to be prohibitive both as to cost and time of construction. General Kitchener, after long consideration and in the face of adverse criticism, decided to build a line from Wady Halfa to Abu Hamed, a distance of 230 miles across the desert. The work was placed in charge of Lieutenant Girouard, R. E., and Egyptian Army, and he with a few other subalterns of the Royal Engineers undertook the difficult task.

The work began January 1, 1897, and forty miles were completed by May 8, 1897, then work started in earnest and between then and November 1st 190 miles of embankment and track were built in spite of the opposition of the elements and of the enemy. From Abu Hamed the line was continued to Atbara, a distance of 154 miles, to which point the road was completed in July 3, 1898. The greatest length of embankment built and track laid in one day was 5300 yards and the

*Strategy, by Col. G. J. Fiebiger, U. S. A.

average, in spite of sand, sun and wind, was about one mile per working day.

SOUTH AFRICAN EXPERIENCE.

At the end of the Egyptian campaign Lieutenant Girouard was retained in charge of the Egyptian state railroads until 1899, when he was called upon to take up another similar and equally difficult task as Military Director of the South African railroads in the British-Boer War. A full description of this work is impracticable here and a brief sketch would not do justice to the great work of Colonel Girouard. Let it suffice to say that there were about 4600 miles of road to be controlled, of which about one-third was in the hands of the enemy at the beginning of the war. I have been assisted greatly in the preparation of this paper by Colonel Girouard's report to the British War Office in 1902.

THE PHILIPPINE INSURRECTION.

The only railroad in the Philippine Islands was the Manila-Dagupan line, about 140 miles in length, running north from Manila. This road was used to supply General MacArthur's army when it advanced north. There is little to learn from the operation of this road except to those who had immediate charge of its repair and operation. For the first six months it was repaired and operated by the Quartermaster's Department which managed to get two trains through daily. The officer in charge of the road was one of the most efficient officers in the Islands, but he was at the same time in charge of another important department that required practically all his time and energy, and as a result the work was left largely to the soldiers and civilian employees.

After this the work of repair was in charge of the chief engineer of the Eighth Army Corps under whom the railroad was repaired and then turned over to the Quartermaster's Department for operation. The road was finally administered by a board of officers as its directors and officials. The main points noticeable were: The absolute lack of preparation to handle such a matter, the lack of a prearranged and continuous responsibility in any one man or department that would require proper preparation for the repair and operation of a railroad distant from the point of supply, the apparent lack of appreciation of the importance of the subject and the

evils of the dual authority in the separation of the repair and operating departments.

TRANS-SIBERIAN RAILWAY.

Every one is much interested in the latest example of a railroad as a war factor, the Trans-Siberian Railroad. The facts as to its capacity are very meager. It was at the outbreak of the war operating seven trains each way daily. The sidings were far apart, and the ferries across Lake Baikal delayed the traffic to a considerable extent. On the outbreak of the war, work on new sidings was at once begun, and in the first nine months 200 were put in. As a result of this, and the new circum-Baikal route, there are now running sixteen to eighteen trains each way daily. Of these, thirteen are military and the others are civil. Of the military trains six are for troops and seven are for materials. The troop trains are said to carry about eight hundred men each. Up to January, 1905, it had transported 300,000 men, besides supplies and munitions.

Facts in regard to the road are hard to obtain, but its performances have already so far exceeded its supposed capacity that the history of its operation will be of great interest to the military world.

TWO KINDS OF RAILWAY PROBLEMS.

In the event of a war there are two distinct and widely different conditions that may arise; they are, a movement by land and an expedition across the seas. In the latter case all the difficulties arise that inevitably attend such a campaign. To meet the railroad problem under such circumstances, all the material that will first be needed must be estimated, purchased and transported, and to insure success the complete *personnel* for its operation must be gotten together before the expedition starts. A landing must usually be forced, and then the railroad work undertaken in all the turmoil and confusion incident to such a landing. If any railroad exists from this new base, the enemy, if he is worthy of consideration, will have taken away every moveable piece of property and will have destroyed or damaged everything that is left.

EXPEDITIONARY FORCE.

The railroad work of such an expeditionary force will properly be: first, the construction of a temporary railroad for

landing purposes, and second, the repair and operation of any pre-existing road, or the construction of a new one. The problems of construction do not come within the limits of this subject, and after securing the new base the operation differs from the similar problem from a friendly base only in that the difficulties to be encountered and overcome are magnified by the distance and by the difficulties of supply and transportation.

OPERATION FROM A FRIENDLY BASE.

When the campaign is to be made from a friendly base there will always be railroads leading into the hostile territory, while behind the army is the home country and all its vast railway resources from which supplies and rolling stock can be had on a few hours' notice. Under these circumstances the railway question may be divided into three parts: The construction of new roads, the operation and maintenance of the roads leading from the mobilization centers to the points of concentration and thence to the base of operations, and lastly, the operation and maintenance of the roads from the base of operations to the rear of the army in the field.

MOBILIZATION AND CONCENTRATION PROBLEMS.

The construction question does not concern us at this time. The second of the above points was covered in the late Civil War by a convention of representatives of all loyal roads not lying in the theater of war. In this convention the requirements of the Government were fully explained and the railroad men promptly agreed to fill them. An agreement was made, in which the preference that the government men and materials were to have in transportation, and the rates of compensation therefor were fully covered. The regular civil officials kept control of the railroads. This will undoubtedly be the solution of the problem in any future war in this country, and it removes a great burden from the military authorities to have so difficult a question so easily settled. The last problem, or the operation and maintenance of a railroad in the theater of war, is the most difficult to dispose of.

Experience has shown that in crises unity of command is essential to a successful encounter with difficulties, and the management of a railroad is no exception to this rule, and in the Civil War there was practically chaos before the military

railroads were finally all placed under one head. The railroads were managed differently in different fields, and there was so much wasted energy and so much bad service that, in October, 1863, all the military railroads were placed under Col. D. C. McCallum, as Superintendent of the Military Railroads of the United States. He promptly organized them on a working basis and the successful operation of them afterward is largely due to his energy and ability.

On January 31, 1862, Congress passed a law authorizing the President to take all railroads in the United States for military use. The action of the convention before mentioned, and the zealous co-operation of the loyal roads, made the extreme exercise of this power unnecessary, and no loyal road outside of the theater of war, was ever used as a military road. An act of Congress like the foregoing can give plenty of authority to operate railroads, but tardy legislation can never give with that authority the trained men and the matured plans required to operate a railroad.

PREPARATION IN TIME OF PEACE.

It is probably wise policy not to have any railroad-operating troops in time of peace. Such an organization could only be small; its opportunities for railroad work could not be such as to keep it efficient; its personnel would perforce be the average enlisted men and the result would be only a play at railroading. Such an organization would induce a false sense of security in the minds of the powers that be, and in case of war, the same number of better men could be employed in less than a week from civil life. But because it may be wise not to have this class of railway troops in time of peace, is no excuse for being totally unprepared to meet this great military problem on the outbreak of a war.

ENGINEER TROOPS AS RAILWAY TROOPS IN TIME OF PEACE.

It would seem advisable to form one company or battalion of engineers of the present establishment into a railway organization, not as a nucleus, but as a depot company or battalion, in which all appliances and tools would be tried and approved or disapproved for future use.

By this means a suitable outfit could be worked up, which, while probably not the best, would at least be an official equip-

ment and would be a beginning and form a basis for future enlargement.

This plan would have an advantage over an office where lists and information, only, were kept, in that troops would be continually using the equipment, noting its deficiencies and improving its possibilities, whereas, if lists alone were kept, there is always the danger that the listed equipment will either become obsolete or it will be found impracticable when sent into the field. A list on paper is prone to provide a more bulky and heavy equipment than would be provided by troops using and transporting such an equipment in the field.

RAILWAY SECTION OF THE GENERAL STAFF.

Long before a war threatens, a section of the General Staff should have this subject in hand and a suitable man for the head of the military railroads should be selected. The Army Regulations of 1904 provide that the railroads from the base of operations shall be in charge of an engineer officer, and the new field-service regulations call him the Chief of the Field-railway Service. Selected in time of peace, he should be notified that his work on the outbreak of hostilities will be those indicated by his official title, and that he is preparing in peace to aid himself in war. The man who prepares the plans in peace should surely be responsible for their execution in war.

DATA FOR RAILWAY USE.

The chances of getting a poor man in this way are less than they will be in the hurry of preparation for a campaign, and a fair plan, ready and worked out as to the details, is better than the most perfect general plan with nothing worked out in detail. In the office of this section should be the most complete and exhaustive data regarding the general subject of railroads that can be obtained. Lists of available and desirable men, both in and outside of the National Guard, in all sections of the country, should be kept up to date. Every railway question that has ever arisen should be studied in the light of the conditions that would govern it in military use. The subject of modern railroading should be studied in all its phases, not only theoretically, but in that best of schools, a modern railway system.

PLANS FOR MEN AND MATERIAL.

The plans should be so perfect and complete that when the call for troops comes, one man is prepared and authorized to handle all railway questions in whatever nature. He has standing contracts with all railways to move men and materials to any and all parts of the country, and by sending a few telegrams he can have, if he wishes them, in one week, a corps of trained railroad men for a system of 1000 miles in length. In this corps there will be men who can do every duty required on a railroad system from those of the general manager to those of a section hand, and can do them well.

EXEMPTION OF RAILWAY EMPLOYEES FROM CONSCRIPTION.

As the Civil War progressed, the War Departments of both the North and South were besieged with applications from the various railway campanies asking to have their employees exempted from enlisting and from the conscription. Many roads, and among them the Pennsylvania Railroad, stated that they were seriously crippled by the loss of their operatives under the conscription acts. All railroad companies would doubtless be glad to have some assurance that their employees would be so exempted, and in consideration of such exemption they would co-operate with the Government in the operation of the military railroads and would furnish the employees for those roads up to 5 per cent. of the total of their own employees. They would also insure these men a return to their positions after the cessation of hostilities. In this or in some similar manner the corps of railroad men could be made to comprise many of the best men employed in the various grades on the different railways.

OFFICIALS AND EMPLOYEES ON A RAILWAY DIVISION.

The chief of the railway section would, by associating with railroad men, become acquainted with men whom he personally knew to be highly efficient and well equipped for the positions that they occupied. This class of men, in any section of the country, are well known to one another and they can practically be rated as to their ability. Among these he would decide on one whom he would enroll as general manager, and others for general superintendent, chief engineer, chief accountant, and other heads of departments.

He would select certain men for the superintendents of divisions, and aided by these, he would enroll all subordinates, including all grades where special skill or knowledge is required. These would include such men as train despatchers, train masters, master mechanics, road masters, operators, enginemen, conductors, brakemen, switchmen, freight-house men, car repairers, machinists, bridgemen, etc., and would constitute the complete personnel to operate a railroad.

Under normal conditions a freight locomotive can run about one hundred miles on a freight run. Two such freight sections as this make a division of about two hundred miles, which is a good unit of control and which we will consider as the length of road under a division superintendent. This would be the unit of the organization. The division superintendent is the head of such a division and all the employees thereon are subject to his orders and all work on the division is done through him. The following is about the personnel for a division of 200 miles, assuming the conditions as unfavorable as they would probably be in a theater of war: One superintendent, two assistant superintendents, two division engineers, one master mechanic.

UNDER THE ASST. SUPERINTENDENTS	UNDER THE DIVISION ENGINEERS	UNDER THE MASTER MECHANIC
4 Chief despatchers	2 Asst. engineers	2 Asst. master mechanics
5 Trick despatchers	2 Instrument men	6 Roundhouse foremen
2 Car distributors	2 Clerks	2 Traveling enginemen
20 Station agents	12 Supervisors of subdivisions	90 Enginemen
40 Operators	20 Foremen	90 Firemen
4 Train masters	60 Subforemen	4 Storekeepers
80 Conductors	40 Cooks	2 Asst. storekeepers
160 Brakemen	4 Commissaries	2 Chief car repairers
6 Freight agents	4 Quartermasters	30 Machine-shop men
6 Yardmasters	4 Draughtsmen	30 Boilermakers
120 Switchmen	150 Bridge men and Mechanics	30 Roundhouse men
12 Experienced clerks		30 Car builders

This would make a total of 716 men with seventy officers and 298 warrant officers, and would constitute one Volunteer railroad regiment. One such regiment enrolled about each of the great railroad centers like New York City, Chicago, St. Louis, Denver and Atlanta would give a sufficient number of skilled men to operate 1000 miles of railway, and by the time that more were needed they could probably be obtained from the old employees of the line that was being operated. Nevertheless the railroads should be pledged to give their men

up to 5 per cent. in case that many men were needed, because the number of men employed is great and they may all have to be obtained by this means. The maximum number employed in the Department of the Mississippi in 1864–5 was 17,000, 12,000 of whom were in the operating department and 5000 of whom were in the construction corps. In making up the foregoing list I have not included therein the various classes of skilled labor that would be employed, but for which no previous railway experience is needed. These can be employed at the time or can be enlisted with the others.

GENERAL OFFICIALS.

The general officials first mentioned must be the keenest in their respective lines that the country affords. They will be specially selected by the chief of the railway service, and kept by him in his office, where they will have general charge and from whence they will direct operations. They will keep in close touch of the situation, visiting the different points on the divisions as often as necessary. They will supply the technical railway knowledge to carry out the military necessities and requirements laid down by the chief of the railway service.

CALLING OUT THE TROOPS.

After the men have been selected and enrolled, their names and addresses will be kept in the office of the railway section, and on the call for troops they will be called out as they are needed. Some will be needed at once at the concentrating rendezvous, and others as the war progresses. They will be notified by telegraph, and ordered to report on a certain date at designated rendezvous for transportation to the point where they are needed. The quota must be called out in time to allow the officials and men to become familiar with the requirements of the situation, for the best railroad man is useless until he knows his division—its stations, sidings, grades, equipment and condition of the roadbed. With any extensive railway communications the foregoing will be the ultimate organization, regardless of the route followed in obtaining it, for it was fully demonstrated in the Civil War that detailed soldiers were not able to fill the requirements, and wasted energy and bad service were the uniform results of every such experiment.

DUTIES OF THE RAILWAY SECTION.

In the office of the railway section must be kept detailed maps of every railroad in this country, and in every country where military operations may occur. These maps should show bridges, tunnels, sidings, "Y"s, roundhouses, grades, curves, etc. Special detailed information as to bridges must be had because the enemy will undoubtedly destroy any bridge before letting it fall into our hands, and duplicates for all such bridges or material for the rebuilding of the same must be ordered at the beginning of the campaign. This was the experience and the remedy in South Africa and the quick repairs made were the result of the wise forethought of Colonel Girouard.

In this same office must be kept complete lists of materials and supplies that will first be needed. These will be obtained from the head of each department, or from some friendly railway official, and contracts should be made with the supply houses to furnish the supplies when ordered. A telegraphic order would then start the necessary supplies to wherever it has been decided to establish the base storehouse. This storehouse should be more fully equipped than one used by the same length of line in time of peace on account of the greater waste and greater damages on a military road.

On the declaration of war the heads of the various departments must be called out, or employed at once so that they may make a study of the problem that they are to attack. There will be no active work to be done by the operating department for some time after the outbreak of a war, if we may judge from past performances in this country. These heads of departments assist in the preliminary work and the collection of employees, and so prepare themselves that, when the advance begins, they are ready to follow behind and keep the railway operating up to the rear of the army in the field.

If some enrollment plan has been carried out, there will be little work in bringing the employees to the concentration point, for an essential clause in the enrollment papers would be one agreeing to report for duty whenever and wherever required by the Government. The men of this organization are higher grade men than an ordinary soldier and the pay should be higher, accordingly.

WARRANT OFFICERS.

To meet this, a certain number of warrant officers, such as we have in the navy, have been provided for. They would be between an officer and a non-commissioned officer. There would be several grades of these with pay to correspond. These are the men most difficult to obtain on short notice, and upon their experience and fidelity so much depends that they should be selected with the greatest care. A military organization should be adopted, if it is possible, for if it is, many difficulties will be avoided. If not, and civilian employees are used, as was the case in the Civil War, the chief of the railway service must bear in mind that they are not enlisted men, but that they are hired employees, giving their services to their country in a hazardous undertaking for a consideration. The Government has secured presumably the best talent, is using it on dangerous work with little hope of reward, and the remuneration should not be grudging. General Sherman says: "I am convinced that the risk to life of the engineers and the men on that railway fully equalled that in the skirmish line and called for as high an order of courage and fully equalled it in importance."

USE OF TROOPS AT THE CONCENTRATING RENDEZVOUS.

It would be a mistake to use the military operatives at the concentration centers unless necessity demanded it, for these railways are assumed to be under civil control and they would desire to use their own operatives. As to the construction department, however, it is a different matter and they should be ordered to the desired point at the earliest moment. There will be miles of sidings to be built, storehouses, platforms and stock yards to be constructed, and these men can do this kind of work better and quicker, and with more understanding and fewer instructions than can soldiers or civilians picked up haphazard.

TAKING THE RAILWAY.

The railroad, if a friendly one, would have to be taken by the order of the commanding general or of the Secretary of War as a war measure. There should exist a general set of regulations to cover such military control which would be complete enough to start work with. As soon as it is known which

road is to be used a set of its operating rules should be obtained and, based on them, a tentative set of rules must be issued to cover the work of the military operatives on that particular line. Gen. D. C. McCallum says: "From an experience of many years as a railroad manager, and having been two years engaged in the operation of the military railroads, the most competent manager in the country, if without previous military experience, would find in attempting the work that the requirements of the work would set at naught all his former opinions and experience." Therefore the military requirements of the situation should be carefully explained to all the officials, and the reasons for the various rules indicated to them. If they have been selected from successful railroad men a simple statement of the situation will suffice for all time.

RELATION OF TIME AND MONEY.

There is one point that should be impressed upon the new officials, and that is that the relation of time and money is no longer what they have been accustomed to. The successful railroad man in civil life, other points being equal, is the one who operates his road the most economically. This would hardly enter the military problem, for time, and not money, is the great consideration at the crisis. The economy so commendable in a civil railway is out of place in a military railway, for the question is not How much it will cost? but is Can it be done at any cost? And in the shortest time possible regardless of the cost?

For this very reason Colonel Girouard, in South Africa, had all work in the immediate rear of the army and all quick repair work done by his railroad troops, as his civilian employees did not grasp the new and abnormal relation between time and money that the military conditions induced. My personal acquaintance with railroad men of this country leads me to believe that they would meet the new requirements instantly, though I believe that a military organization would lead to better results than civil employment.

[TO BE CONTINUED.]

INFANTRY DRILL; SOME OF ITS ESSENTIALS.

By Lieut.-Colonel CHARLES J. CRANE, Eighth Infantry.

SOME of the things most essential to a good infantry drill are not properly appreciated.

COMMANDS.

The different infantry-drill regulations have explained how commands should be given to infantry. General Principle No. 8, on page 12 of the new book, contains an excellent description of the same, but we hear at almost every drill of our infantry commands such as are prescribed for use in drilling mounted men—*i. e.*, "the preparatory commands are more or less prolonged to insure their being heard; the command of execution is always prolonged."

There is more in the manner of giving a command than is dreamed of by the great majority of us.

Commands like those properly given to mounted men will never achieve proper results with infantrymen, whose movements must be more snappy and uniform than can be expected from horses, with more sluggish intellects.

The manner of giving his commands will also show whether or not the instructor is deeply interested in his work, knows that he is right, and means to be obeyed.

The commands will be executed in exactly the same spirit which animates them. The instructor's spirit is breathed into every explanation he offers and every command he gives, and he will be understood by his men and obeyed exactly as he deserves to be.

The instructor who is himself not well instructed and is conscious of the fact will reveal the secret to his men in his first commands, and any "indifference in giving commands" will be answered by equal indifference on the part of the men.

Men cannot possibly drill well when they see that the instructor is timid, ignorant or indifferent, and they cannot be deceived on either of those points.

There must even be a cadence followed in giving commands, in order to obtain the best results. But it would be wrong to use the same cadence in giving commands in the manual of arms and in the school of the battalion, especially in those

movements which require the repeating of the major's preparatory commands by chiefs of subdivisions.

It is believed that in the manual of arms the interval between commands should be the same as the cadence required in their execution.

We have only to watch the halting of several squads, companies or battalions to be sure that the great majority of instructors allow too great an interval between their commands in such cases.

In close-order drill the best results in halting a squad or a company will be obtained by using the same interval between commands as in the manual of arms, but this interval should be at least doubled in every other case.

In extended order movements, enough time should be allowed between commands to enable the instructor to see that his preliminary commands have been understood, and obeyed.

POSITION OF THE INSTRUCTOR WHEN GIVING COMMANDS.

If the instructions contained in the book were intelligently and honestly carried out, no cause for criticism would be left.

There is no doubt that "when giving commands to troops it is *usually* best to face toward them," but it is firmly believed, that when possible, it is *always* best, and it is also believed that it is *almost* always possible to do so.

If the instructor tries to face his men in giving commands he will find that he can almost invariably do so, and if he takes the proper interest in his drill he will certainly try to do it.

Only when facing his men can he observe each mistake, note the cause, and knowing the cause, understand how to apply the needed remedy.

Using the latitude allowed him by the book, the instructor goes wherever his presence is necessary, but the average drill instructor abuses this privilege; he has always done so, and he will continue to do so until the privilege is revoked.

Except in the first instruction of recruits the instructor will rarely, very rarely, have to leave the position assigned him by the book, and to that position he should promptly return.

He is not required to stiffly look always straight to his own front. His duty requires him frequently to turn his head, and even face about, to be sure that his men understand and properly obey his commands. It is never best for the instructor to

remain motionless except to turn in his place while drilling the squad or company around him indefinitely, yet who has not seen it done many times?

Of course, the post commander can by personal supervision and numerous orders regulate the question of position of the instructor, but the result will be removed with his departure from the post, for the instructors will consider that he has no right to interfere with the liberty granted them by the book.

The book should remove the temptation which has for many years been greatly responsible for much perfunctory drilling, and should fix the position of the instructor at drill more definitely.

LOYAL SUPPORT OF SUBORDINATES.

Unless all work together the result must fall short of success, yet we have all seen silent opposition and lukewarm support shown at drill by company commanders who have utterly failed to understand the situation when errors in their companies have been pointed out by the battalion commander, and have thus shown their resentment against their instructor, who has performed only his proper duty, and, in doing so, happened to see and note what was going wrong at drill. The company commander's duty in such cases is to promptly rectify each error indicated, and this frequently includes holding to swift accountability enlisted men who stubbornly decline to be corrected, even by the battalion commander.

When a battalion commander is compelled to call attention of company commanders to the mistakes of individual men by name the proof is already established that such company commanders have either neglected their duty or have proven their incompetence at drill.

Every battalion commander understands how such silent opposition and lukewarm support on the part of his subordinates can, for a while, nullify his best efforts, and no description of such attitude is necessary.

Loyalty to a common purpose in great undertakings will hardly be located in a body of subordinates who cannot render proper support on the drill ground, but where it does exist there will be no limit to what can be done, and it should be the object of each commander to arouse such a spirit in his subordinates if possible by proper means.

EXTENDED-ORDER MOVEMENTS.

There seems to exist a disinclination to do much work in extended order. It is believed to exist in a great many instructors of squads, companies, and battalions.

The remedy lies with the post commander, of course, and he can compel his subordinates to do more drill in extended order, but it surely is not gratifying to find this necessary.

Practice in extended-order movements is so indispensable these days that there is no good excuse for ignorance thereof, and the new book has greatly assisted us by the addition of various new features to that part of the drill, thus making it more attractive to those who practice it often.

With proper appreciation of the points mentioned, our infantry would be much better drilled, and its discipline and efficiency would thereby be greatly improved.

If either discipline or efficiency be given a perfect value of 100, at least 55 per cent. of such excellent condition would be due to drill, less than half being caused by all other means used.

SAN JUAN, P. R., June 19, 1905.

WHY GENERAL BONAPARTE WAS SELECTED TO COMMAND THE ARMY OF ITALY.

By Lieut.-Colonel W. E. BIRKHIMER, Artillery Corps.

THE after-career of this great man is well understood. Commencing with the assumption of the command of that army, his every act has been passed many times under the calcium-light of historical investigation, with result that the world can be said to understand the subsequent incidents of that extraordinary career, and the motives prompting those, including the chief actor, who played conspicuous parts therein.

With his prior career the case is, however, very different.

It is a fact that before this assignment General Bonaparte never had exercised an independent command in the field.

Some powerful reasons must have prompted to the assignment of any officer to such an important station as the command of the Army of Italy under these circumstances. If it be practicable, it cannot but be both interesting and professionally profitable to ascertain what these reasons were. It is believed that they can be demonstrated from well-established facts. To understand these it is necessary carefully to examine the prominent incidents of his previous military service.

He was French by adoption only; he was a Corsican by birth, which occurred at a time when France had scarcely more than a pretense to jurisdiction over that island, and, until he had grown to man's estate, his love for Corsica, even after he held a French commission, followed next after his consistent, ever thoughtful and beautiful love for his immediate family.

It need not be supposed that the conqueror of Italy of 1796 sprang forth in all the panoply of war out of nóthingness. He had previously shown to many, closely associated with him, and who were discerning and unbiased, that he seemingly possessed in an eminent degree every quality that, when opportunity offered, was to astonish the world by the exhibition of his gifts.

Born August 15, 1769, he was admitted, April, 1779, when nine years of age, to the military school at Brienne, France, where he remained until October 30, 1784, when, because of demonstrated fitness, he was transferred to a preparatory school for the army at Paris, whence he was nominated, September, 1785, when sixteen years old, to a second-lieutenancy in the artillery, in which arm he served for ten years.

The Brienne school was under the supervision of monks, and therefore it is fair to presume that none of the students received the highest order of military instruction. Simplicity in living was one of the cardinal virtues inculcated, and, because of his straightened pecuniary circumstances, the enforcement of the rule must have been highly pleasing to young Bonaparte.

The stories that have been related about him while at Brienne must largely be regarded as apocryphal. One fact, however, must have been especially galling to a brave, proud, sensitive boy, and that was the distinction permitted among the students because of birth and pecuniary resources. The nobility of his family had been officially recognized by the French authorities, but that made no difference to his associates at Brienne, who knew nothing and cared less about Corsican nobility. His straightened pecuniary condition was an ever-present reality. Little wonder that the bitterness of gall was instilled into his being, to influence his entire subaltern life.

Official reports tell the story of the sum total of Brienne work. The inspector-general was pleased with him: "Constitution, health, excellent; character, submissive, sweet, honest, grateful; conduct, very regular, has always distinguished himself by his application to mathematics; knows history and geography passably; very weak in accomplishments; will be an excellent seaman; is worthy to enter the school at Paris." On the back of the certification to the Paris school was written by the school authorities: "Character, masterful, imperious, headstrong."

If the latter character be substituted for that given by the inspector, the truth, doubtless, would fairly have been told. Certainly no one except that official ever gave expression to the terms "submissive" and "sweet" as descriptive of Bonaparte's character. His mother, with the fulness of maternal affection, would not have done it, and, even in making love,

he was so ardent, wilful and tempestuous that his future wife expressed her fear of him.

He was second lieutenant five years nine months; a little over six months first lieutenant, being promoted captain to date February 6, 1792, and confirmed as brigadier-general February 6, 1794.

It need not be imagined that he had not left the impress of unusual qualities along this pathway of eight years and five months' service.

Something over six years and three months of this had been as a subaltern officer. Certainly the record does not here present him in an amiable light. There is not a word of commendation from his immediate military superiors—his captain and colonel. On the other hand, the latter had reported him for inattention to duty and insubordination. He had three leaves of absence while a subaltern, which he invariably spent in Corsica, an unfortunate circumstance from a disciplinary standpoint being that in no instance did he return to duty at the expiration of his leave, but stayed away without it, trusting to attendant facts, when presented to superior authority, to exculpate him from blame; nor was this confidence ultimately misplaced, for, although at one time cashiered, still, when the authorities finally reviewed his case, as he presented it, his course always was vindicated, at least to the extent that he never, in the long run, suffered loss either of rank or pay.

Beyond the regiment, the element of politics soon commenced to influence the treatment of the young officer; but among the officers with whom he served when with his company such a record was calculated to make a very unfavorable impression regarding his efficiency or his zeal in the military service. The truth appears to be, and it may as well be confessed, that Bonaparte was a very indifferent subaltern. He came from his mother's womb above that station, and he never could get down to it, nor could anything force him there.

He utterly lacked the social qualities that lead to good-fellowship, so essential among officers of a regiment. , He confided in no one; held aloof from the society of his peers; expressed his opinions without reserve, and often with little respect for the views of others. As while he was a subaltern no occasion had arisen that enabled him to demonstrate either the soundness of his contentions or their superiority when contrasted with those of his military associates, it could not be

expected that the latter would or could regard his views, however energetically expressed, or strenuously maintained, with patience, let alone yield to them the palm of carrying conviction. In brief, he justly seems to have been regarded a disagreeable and, in the discharge of his regular duties, rather lukewarm officer.

And yet what admirable qualities he displayed in other directions! He lived strictly within his scanty means, or, when this was impracticable, liquidated his debts as soon as possible. It was no uncommon occurrence that he had only a single meal a day, or lived in the most frugal manner, taking what he thus was able to save for the education or helping otherwise of some member of his family. If his spare pennies were not thus absorbed, a favorite use for them was the purchase of improving books. He was indefatigably industrious. During much of the time he was in impaired health; the food that he could afford was not always sufficient properly to maintain a healthy man; and still such was his power of application that, when he could secure valuable books he never ceased to absorb and make their selected contents part of himself. He read with great discrimination. He sought out the rationale of history. He wished to know how governmental institutions rose, throve and fell, and why, and the same of their peoples. The same system was used in studying the campaigns and battles of great warriors. The intricacies of finance absorbed much of his attention. The books he then read, with his copious and pertinent notes, in great degree remain to this day as evidence of all this; and, as his memory was retentive almost beyond example, he never forgot anything; thus in after-years surprising men by having always at command an apparently inexhaustible storehouse of useful and well-digested knowledge.

How little this youth, whom nature secretly had so lavishly endowed, was understood by those around him, or, for that matter, except through the mists of intuition, did he understand himself! At the very time when fault was being found with him for not performing his subaltern duties, he, in that cold, distant and unsympathetic mind, was laying correctly, broad and deep, the principles upon which were to rest the foundations of empire.

Little wonder that among regimental military associates he was deemed to be, and in fact was an indifferent subaltern.

The orbits in which they revolved belonged to different worlds.

In early commissioned days his ambition, evident and boldly avowed, was in no manner so conspicuously demonstrated as in his writings. The topics dwelt upon were numerous—military, governmental, metaphysical, historical, fiction. His style was vigorous, his ideas sometimes striking in depth and practicability, and, as the years advanced, he abandoned lofty flights and dealt with things wholly terrestrial. If, however, a just estimate, measured by after-events, were sought to be placed on these early literary efforts, he furnished it in a persistent attempt, after he rose to power, to secure and destroy everything he then wrote. Fortunately, he was not wholly successful. And yet, although this cannot be mathematically shown, it does seem to be the fact that, had it not been for the use of his pen, he might never have been able to attract, as he did, the favorable attention of those special representatives of the French Government, either with the army or in Corsica, who, ultimately, either directly or indirectly, had more to do with securing him the command of the Army of Italy than any other single influence. He never was idle, and, if so situated that he could do nothing else, his ready pen helped to carry off the load of an overcharged brain. Some of his writings were published, but by far the greater part were not. A history of Corsica was written and rewritten several times. Those of his writings, however, that attracted special attention dealt with the practical solution of governmental or society questions arising more or less prominently as incidents of the French Revolution. Few French citizens indeed were either bold enough or sufficiently able to grapple with such topics at that time, and no doubt Bonaparte frequently ran great risks of slipping into the seething volcano of human passion, the edge of which he threaded. Still, he escaped unscathed, and, what was to his immense advantage, he made, by this course, friends of men who not only then, but subsequently exerted a powerful influence in the central government, notwithstanding its numerous changes. He builded with his pen far better than he knew.

It was a commentary upon the distraction, radiating from the Paris of those days, that Bonaparte, after having devoted his best effort to ameliorate Corsican affairs, was, with his family, forced to flee from that island June 11, 1793, the family

thereafter being supported as refugees by the French Government. Political conditions brought this about, the merits of which it is not intended here to go into; nor is it pretended that they are understood. Suffice it that, after having been the champion of all things Corsican, writing and revising her history time and again, after having held the position of lieutenant-colonel in her troops, and engaging as such in her military expeditions, he finally, at the age of twenty-three years, was impelled to abandon the attitude of her champion and leave her shores.

Hitherto his services in France and occupations in Corsica, had been of a desultory character; but now he was to enter upon the soldier's life-work in real earnest. It is true that, down to this time (June, 1793), he had seen no active service in the great military events in which the French Government had embarked. Yet he was by no means without military experience, having, in the small affairs of Corsica, during the few years just passed, acted a conspicuous part, and this as a leader, a position that he assumed as of right, and willingly was conceded. Nothing was lost on him in this experience that the practical soldier could derive benefit from. Moreover, he had seen many of the most stirring events of the French Revolution. He had pondered well over the transactions passing before his eyes. He was favorably known to the administration through his political services in Corsica and his pen. In a word, although in a very subordinate position—captain of artillery—he was well equipped, both professionally and politically, to act a part in those troublous times, in which however much military capacity was in demand, political orthodoxy was, as in all civil commotions, necessarily linked with it a *sine qua non* to governmental favor.

After service in various stations in the south of France during the summer of 1793, he found his way, in September of that year, to the army investing Toulon. Here was a typical republican army, commanded largely by officers only recently in civil life. In point of fact, the real commanders, certainly so far as policy was concerned, were the commissioners—civilians, sent out by the central government at Paris to keep it informed regarding the conduct of the military and the progress of affairs. One of these commissioners at Toulon, when Captain Bonaparte arrived there, was a fellow Corsican, both a personal and political friend, who doubtless, through

previous contact, had formed a high opinion of the young captain's abilities. The artillery commander, in a certain part of the siege operations, having been incapacitated by a wound, young Bonaparte was, September 16, 1793, assigned to his station. What his services actually were during this siege, considered on their military merits alone or compared with the services of others, has been a matter of great dispute, which will not be joined in here. It is easy, however, to understand how the commissioners must have been delighted with him; the forcefulness of his character, tenacity of purpose, professional resourcefulness, unquestioned bravery, his wonderful knowledge, acquired through reading, and always at the tip of his tongue when needed—all these, coupled with his loyalty to the Administration, pointed him out as one of whom high hopes might well be formed by the Government then in power. Thus was he buttressed on the political side.

On the other hand, although the very qualities mentioned above as commending him to the commissioners might, when carried to extremes, present him to his military associates as opinionated, insubordinate and graspingly ambitious, still, the general commanding the artillery at the siege, in a despatch two days afterward to the Minister of War, referred to the services that Bonaparte had rendered in the following terms: "A great deal of science, as much intelligence, and too much bravery; such is a faint sketch of the virtues of this rare officer. It rests with you, minister, to retain them for the glory of the Republic." Immediately the commissioners nominated him for general of brigade. He was confirmed February 6, 1794, and soon after assigned as commander and inspector of the artillery of the Army of Italy.

In his new field of duty he found commissioners of the central government, and official records show that the esteem in which they held him and his services was ever on the ascendent, and official reports to this effect were sent to Paris. As a result, it is fair to suppose, of this good opinion he was sent an envoy to Genoa in July, 1794, on a matter requiring very delicate handling, acquitting himself in a manner so highly creditable as still further to enhance his reputation as an astute and resourceful personality. So much for the political side in Italy.

It would seem he had fair grounds to believe that his ad-

vancement in military reputation kept equal pace. Within a month of his assignment as commander of artillery, at a council of war of the armies of the Alps and of Italy, the plan of campaign as proposed by Bonaparte was approved. It was this which, so far as any plan was given effect at all, was carried into execution that year by the latter army. Certainly it appeared that, at last, he was on the path to glory.

But now occurred one of those incidents with which civil commotions are so prolific. His particular friend among the commissioners with the Army of Italy was the younger Robespierre, but, on July 28th, while Bonaparte was on the Genoa mission, both the Robespierres were executed in Paris. Thus one of the powerful sources of his influence was swept away. Following this, due to some cause best and perhaps only known to the central government, he was deprived of his command, and, August 10, 1794, placed in arrest. As had occurred in all previous investigations when his conduct had been officially investigated, he was exonerated; he was released and restored to his command. As was the case in certain periods of our own Civil War, such instances were so common that his own experience did not, perhaps, make much of an impression upon him. He stood, every sense keenly on the alert, every faculty of the mind trained up to the point of controlling great events, ready to seize any opportunity that offered in the shifting scenes of the national kaleidoscope. Nor did he have to delay long, although attended by many distressing incidents, until the turn of the wheel carried him, equipped at every point, to the apex of fortune.

He took an active part in preparing the expedition against the English in Corsica in the latter part of 1794. His position in the artillery in Italy having, as a result of this absence, meantime been filled, and he assigned to duty with the infantry in the west of France—a transfer that for some reason he deemed exceedingly distasteful—he repaired to Paris. It is interesting to read the remarks of the commander of the army of Italy, made, perhaps, when Bonaparte left his army, and as a matter of routine: "This officer is general of artillery, and in this arm has sound knowledge; but has somewhat too much ambition and intriguing habits for his advancement." Every soldier will understand the equivocal nature of this statement, from a military standpoint. Surely it did not exhibit Bonaparte in an enviable military light, however much

his abilities may have been recognized. As illustrating the changes of fortune of the times, it is a curious fact that within less than a year the officer of whom this was written relieved him who wrote it of his command, and carried the army forward to a series of victories that the latter did not deem to be within the range of possibilities, and even the preliminary movements of which it was beyond his capacity to inaugurate Too much fault, however, must not be found with the commander of the army for giving Bonaparte this indorsement. While acknowledging his professional attainments as he, the commander, saw them, and remarking his ambition, which, properly controlled, is a mainspring to military success, and therefore commendable, he invited attention to that other prominent feature which, with reason, superior officers hate as the greatest blemish of the subordinate's mentality—the spirit of intrigue—that going outside of official channels to further his military interests—which ever had been one of Bonaparte's characteristics, and one of the strongest levers by which he raised himself to fortune. The boy was father to the man. This was precisely in line with what his colonel, as before mentioned, had observed and referred to when, as a subaltern, he officially had reported him for insubordination.

He arrived in Paris May 10, 1795, broken in health, dissatisfied with his new field of duty, sought an inconspicuous place of abode, strenuously, but unsuccessfully, seeking to secure a revocation of his infantry assignment, and, for the reason that he could not be moved to his new field of duty, his name, in September, was struck from the list of generals on duty, although he retained his commission.

These facts show how General Bonaparte stood at this time in the light that comes down through the regular military channel. It is not for one moment to be supposed that his military associates of all grades were not impressed with that intellectual superiority, especially in professional affairs, that seemed to permeate the very atmosphere in which he moved; but as yet he had been able to furnish no test, satisfactory to them, as to whether he was a genius, capable successfully of suiting the action to the word, or merely a clever and plausible theorist. Again it may have been that his military superiors were somewhat jealous, for, it was but natural for them to demand that before concessions to his assumed great abilities be made he should, as others had been

compelled to do, demonstrate those abilities in actual conflict with the enemy. That was the plain soldier's view. Moreover, the fighting soldiers—those who in the field were bearing the burden and heat of the day, far from the center of political power—could not but feel a certain sense of disquietude at seeing the evident advance in political favor of an ambitious officer, so immensely clever in ingratiating himself with those who decided the governmental policy and dispensed its patronage, including assignments to military commands.

It is impossible to cavil at this, the soldier's course of reasoning. He arrived, indeed, at erroneous conclusions, but that was because he now dealt with the failing case—a genius, and not the ordinary man—and therefore his premises were wrong.

Such, it is believed, is a correct presentation of the strictly military side of General Bonaparte's case as he stood ready at the next step to enter with firm tread upon the pathway of that extraordinary career that has marked him as one of the greatest of the human race.

Besides the question, however, as to how he stood, judged by the strictly military standard, and by his peers of the army, there was another of vast importance at this juncture, namely, how he stood with the existing French administration. Fortunately he passed this test well. For years the officials of this central government had regarded with increasing favor his clearly demonstrated superior abilities in many directions. Its sources of information have already been adverted to, as the commissioners sent to the armies and elsewhere to keep the Paris officials truly informed regarding persons, things and events on the outside. The administration, and these, its agents, had regard only for what was best for its interests and the perpetuity of its power. For the soldier the two important questions were as to his political loyalty and his ability to beat the enemy in battle. To a considerable degree military subordination was out of the commissioners' channel of thought; and, doubtless, numerous of them, especially civilians, did not understand it; moreover, the turbulent times were not conducive to the pursuit of affairs by regular mehods. Fortunately for Bonaparte, some of these officials were fellow Corsicans, and to all, Corsicans and others alike, he commended himself, first in Corsica, then at Toulon, afterward in Italy, and reports regarding his great abilities

were frequently made by these confidential agents, through whose eyes the central government saw things. It readily can be appreciated that he made a profound impression. The government sought results without weighing nicely the means of accomplishing them. If a subordinate officer low down in the scale of rank could win victories, the government was willing that he should do it, even if this caused a setting aside his military superiors. It was one duty of the commissioners to unearth such subordinates, if any there were, and in Bonaparte they thought they had found one of great promise. The indomitable industry of his life here bore fruit. He towered immeasurably superior to anybody else in knowledge derived from books, and of a nature pertinent to the topics then of most interest, and he stood ready practically to use everything he had read. He never forgot anything he saw, and was able to turn it to military advantage. A good illustration of this was furnished as a result of his embassy to Genoa. He made a study of the topography as he went along, and immediately turned the knowledge thus acquired to account in preparing a plan of campaign for the army in Italy, of which he prepared several for submission to the commissioners, and now, during his leisure, while waiting in Paris, he submitted another, and revised plan, which, having been examined, and approved, ultimately he carried into effect.

It is easy to understand how his intimacy with the commissioners, and the opportunity he thus had outside of army channels of winning his way to favor at the seat of government, should have caused his military associates, more epecially his military superiors, to look coldly upon him. These commissioners were, in effect, spies upon the conduct of these superiors. The central authority at Paris saw things affecting the army and the conduct of the war, not through the eyes and reports of commanding generals, but of the commissioners. It was a conditon of affairs characteristic of civil commotion. Yet thus it came about that Bonaparte, while he waited in Paris during the summer of 1795, stood in much higher military favor in the civil branch of the administration than in army circles. It also is true that each branch, the military and the civil, when the point of view that each was compelled to take is considered, was entirely justifiable in arriving at the estimate it did. Each would willingly have subscribed to the character given when he was sent from Brienne to the Paris school, eleven

years before—"masterful, imperious, headstrong"—qualities that the army believed had not made a good subordinate, as, in the nature of things, unless controlled, they cannot do; but which are necessary to highest military leadership, where the central administration, it well may be imagined, hoped they yet would be utilized. The solid foundation for this hope lay in the reports of the commissioners, and the emanations from Bonaparte's pen, more especially his plans of campaign in Italy, all which were in the governmental archives.

And yet, as matters stood, Bonaparte was a long way from assignment to command of the Army of Italy. This was not to be brought about until he had rendered a signal service in the military line to the central administration which, in its results, as it believed, had saved it from being hurled from power and saved the lives of its members; for certainly had the sections triumphed on October 5th (13th Vendémiaire), 1795, the leading members of the former government could have expected little mercy. The part that Bonaparte played in the events of this day has been a matter of dispute, and has been disparaged by Barras, a member of the Directory, and whom the Convention had placed in command of the troops to put down the uprising. It is true that Bonaparte was only one of seven subordinate generals under Barras on that occasion. But the part that Bonaparte acted was so decisive and so universally recognized by contemporaries—eye-witnesses, and cognizant of all the facts—that he leaped at one bound to the top round of administrative favor. In brief, the government felt that he had saved it. Barras' only merit lay in the fact that, to quell the insurrection, he had put the right man in the right place. In memoirs published just a century later he attempted to enhance the importance of the part he acted, and decry what Bonaparte did on this occasion; but, as has been well said, "Barras' only claim to immortality lies in the fact that he now was privileged to hold the stirrup for the great captain who vaulted lightly into the saddle."

The 5th of October, 1795, set the seal to Bonaparte's letters patent as the man of destiny. A feeling of gratefulness permeated the members of government to a degree that nothing could have generated short of a consciousness that he had saved them from the guillotine. They naturally now were in a receptive mood favorably to consider other propositions in his favor. When, therefore, the plan for the next campaign in

Italy was seriously taken up, that proposed by him, and which already had been approved, was, in January, 1796, sent to the commander there for consideration. He returned it with the remark, deemed scantily courteous, that he who planned that campaign should execute it.

It was determined that this, accordingly, should be done, and General Bonaparte, now as commander-in-chief, joined the Army of Italy at Nice, March 27, 1796.

It cannot with truth be asserted that his selection for this position was due to the esteem in which, as a soldier, he then was held by his immediate military superiors. This, notwithstanding the report in his favor of the artillery general at Toulon and the admiration and devotion of good soldiers and personal friends like Marmont, Junot, and others, whose intimate contact had enabled them the more correctly to gage his real military capacity. It was due, first, to the profound conviction that association with him had carried to the minds of agents of government of his extraordinary military abilities, to be followed and confirmed by conviction, similarly created in the minds of members of government themselves, strengthened by gratitude for the great services he was enabled, personally as well as officially, to render them at the supreme moment of their administration. When, therefore, a plan of campaign proposed by him and approved by the government was rejected by the commander of the army in Italy, it was not unnatural, under all the circumstances, that the task of its execution should have been entrusted to him who originated it.

The administration had the satisfaction of seeing its judgment confirmed beyond its most sanguine hopes regarding the military abilities of the new commander, and it was soon to realize that this was only one of his profusion of intellectual gifts. Moreover, what doubtless was less agreeable, it found him as untractable a subordinate as had previously his military superiors. No commissioners of the Directory ever were permitted to spy upon and control his movements. In the economy of nature there was but one station and rôle for which he was fitted, and that was at the head, and to govern.

REMARKS ON MANEUVERS, MAINLY FOR THE USE OF COMPANY OFFICERS OF INFANTRY.

By Captain U. G. McALEXANDER, Adjutant, Thirteenth Infantry.

THE subject of this paper was chosen before the article written on "Combined Manuevers," by Colonel Wagner, appeared in the Journal of the Military Service Institution, otherwise I would not have presumed to have expressed opinions so freely after the Master of the Art of Maneuvers had spoken. But, fortunately, the subject is broad enough to admit of discussion by many minds; and observations made in four different maneuver camps may interest those who have not had like opportunities.

The object of all military training in war or peace is the accomplishment of beneficial results to the nation by armed force, and this may be accomplished by preparing each individual in the service for the duties he is performing and for the duties which may at any moment be thrust upon him.

In no place outside of actual war is it so easily possible to ascertain an officer's adaptability to the purposes of war as may be ascertained at maneuvers.

The intimate relation existing between peace maneuvers and actual field-service in war makes it imperative that, even in a fairly instructed army, the officers and men shall have received all available instruction in the peace maneuvers that they may be the better enabled to understand and know how to perform their duties in war.

General MacArthur has said that the peace maneuvers at American Lake, for example, simulated all the conditions of war except its tragedy. The tragedy is assuredly absent from the peace maneuvers, but there is also absent a few other elements. In maneuvers a game is played, in war a game is also played the stakes being in the latter case the lives and material of the opponents. In the former an umpire decides, in the latter the strongest battalions give the decision.

The thorough training of troops before participating in maneuvers or war is of the most vital concern to commanders

of all ranks, and in no other vocation in life will disaster be so quickly reaped from imperfect or total lack of training as when the contest of arms is on.

Like every human institution maneuvers may be criticized, and, as usual, the irresponsible are the loudest; but it may well be remarked that responsibility has a chastening and purifying effect in maneuvers, as in any other part of army administration.

I will divide my subject into the following subheads for presentation in sequence:

1. Preparation at the Home Station.
2. The Assembly and Organization in Camp, Sanitation, etc.
3. Tactical Instruction, Drills and Ceremonies.
4. The Umpires, with Reports of Operations and Discussions.
5. Breaking Up and Return to Home Stations.
6. General Remarks.

Under the heading "Preparation at the Home Station," it may be said that it is a useless and senseless waste of time and money, with no beneficial result, to attempt maneuvers with uninstructed troops during the time usually allotted or permissible for the militia.

In the instruction preparatory to maneuvers, it must be assumed that all the movements prescribed in the Drill Regulations have been taught and executed until they are understood by all officers and men; this must be taken as the alphabet of instruction. If officers and men cannot execute all necessary close and extended order drills, understand ceremonies, be able to take formations for advance and rear guard and outposts, know how to go into camp as laid down in the Drill Regulations, they should never be considered as available for maneuvers. All of this is needed to secure the necessary cohesion in command before beginning instruction in minor tactics.

The following is suggested as a program of instruction for infantry:

1. Instruction of the squad on varied ground, as in the Drill Regulations for Infantry.

2. Instruction of small patrols and scouts, insisting upon secrecy and prompt transmission of important intelligence and that a patrol is never to fight except under unusual circumstances, and then only in self-defense or to effect an important capture.

3. Contact of patrols (same company).
4. Advance guard drill of infantry.
5. Formation as rear guard and as flank guard.
6. Establishment of company outpost (Cossack).
7. Company acting alone in attack or defense, also in battalion, if possible.
8. All officers and non-commissioned officers to become able to construct road sketches, and officers to become proficient in making short, concise reports, in military language, of the operations of their commands in anything they may be required to do.

In the above outline, the taking advantage of terrain to secure shelter should be carefully taught, both as to natural features and artificial shelter.

If officers and men meet the physical requirements, and all of the foregoing has been thoroughly done, the organization may be considered as a unit which may be profitably used in combined maneuvers.

Before proceeding to the maneuvers, each man should have the necessary ordnance, equipage, toilet articles and clothing to include one suit of blue and one of brown or khaki.

Ordnance to consist of rifle, bayonet and scabbard, belt and fastener, gun sling, jointed ramrod, oiler, haversack, and canteen with straps, knife, fork, spoon and tin cup.

Equipage to consist of shelter half, poles, pins, rope and barrack bag, which latter is to be used to carry materials not possible to carry in roll.

Clothing to consist of two blankets, one poncho, fatigue suit or khaki suit, one campaign hat, one pair leggings, one blue uniform (old style), two pairs shoes, one double-breasted shirt, one khaki shirt, three suits of underwear, six stockings.

Toilet articles to consist of three towels, cake soap, comb and brush, tooth-brush.

Under the heading "The Assembly and Organization in Camp, Sanitation, Etc.," it may be presumed that orders will have been issued from the Division Headquarters to each command providing for its transportation, subsistence, time of departure from home stations, expected time of the arrival at the maneuver camp, the brigade to which assigned for maneuvers, what camp and garrison equipage is to be brought with troops, what means of transportation and supplies, etc. Each company should be provided with one mess chest for supplies and a small box for mess pans and kitchen utensils, camp kettles being carried loose. Two iron uprights with hooks to

hold a cross-bar should invariably be taken, whether or not field ovens are furnished. Embarkation and disembarkation, entraining and detraining, words so full of mystery to the uninitiated, is a matter of so little brain-force expenditure that they need not be discussed

Upon arrival at or near the camp a staff-officer should at once conduct an officer of the command to the camp site to be occupied and point out previously marked lines for tents of officers and men.

Sinks having been provided, the first care in camp is the immediate establishment of the cook tents, the making of coffee and preparation for the first meal in camp, remembering that a contented stomach is to most men the first requisite to a contented mind.

The camp is pitched and tents arranged exteriorly and interiorly as has been prescribed in orders previously issued. The command should then be furnished with orders as to sanitation, disposal of refuse, guards to be maintained, the routine warning, formation and service calls to be sounded, etc.

Each commander should be also at once furnished with maps of the region to be operated over, the schedule of exercises, instructions for maneuvers, and as soon as practicable with a roster of troops. The first duty of the commander is to call on the next higher commander and report the arrival of his command.

Orders from the headquarters maneuver division should issue announcing place and time of issue of rations to the various commands and the daily issues of beef and bread, the names of the chief and senior umpires, the method of distinguishing members of general staff, accredited attachés, umpires, distinguished visitors, accredited correspondents; the description of the various flags of division and brigade, and orders concerning depredations by troops, etc.

Under the heading "Tactical Instruction, Drills and Ceremonies," my sense of what is the best method to pursue makes me distinctly opposed to much of what I have seen crowded into each of the four maneuver camps attended. It is a statement of fact and not of opinion that combined peace maneuvers are new to our nation and its officers, and that the first steps are liable to be uncertain and faltering; the temptation to overcrowd the program of instruction has without exception caused maneuvers, exercises or drills to be dropped out. Par-

ticularly was this dropping out and change of the schedule noticeable at Camp Atascadero, California. Every officer whom I have heard express an opinion has recommended that maneuvers take place on alternate days. As this would permit of but about four or five maneuvers while the militia were in camp, it at once becomes most vital that the problems be set forth with the utmost particularity and that verbal instruction concerning each be imparted to both officers and men before their execution in the field. In the rush at a maneuver camp, as they have heretofore been run, there has never been time for the proper preparation of orders or plans by the commanders, and usually orders have been transmitted to subordinate commanders but a short time before or at the beginning of a maneuver, and the exercises have followed each other at such a short interval that commanding officers and umpires have been unable to properly prepare their reports before being called upon for other work. Each maneuver should have enough time set apart for it that thorough preparation of orders and plans be made, that these be transmitted to the command affected and that personal tuition be given in all matters wherein secrecy is not essential. After each maneuver there should be time enough allowed for the proper preparation of reports of umpires and commanding officers and the preparation of the chief umpire's report. The chief umpire's report preceded by those of the two superior commanders should be read before a general assembly of all of the officers and then be followed by a general discussion open to all. In this manner should each maneuver be concluded. Then the next maneuver could be taken up and disposed of in a similar manner, the work of the maneuver to follow being taken up by officers as soon as each has completed his work on the next preceding.

The tactical instruction given in the problems should be followed on the succeeding day by drills or ceremonies, or where defects have been discovered in the main problem by a minor problem of the same kind to teach the correct idea to both officers and men. Nothing should be done which has not a forceful reason for being done, and nothing done should be allowed to pass unless properly done; a correct understanding must be had by every element of what is required of it, and each element must be compelled, if necessary, to perform its proper function. The problems prescribed for solution should have a practical bearing and must, to be of value, have every

possible similitude to actual war conditions, advance and rear and flank guards, outposts, convoys, with attacks on each, passage of defiles, choice of defensive lines with attacks on them (march and deployment of the larger units for the benefit of their commanders). In each and every problem requiring the movement of a command require its transportation to accompany it, thus having commanders feel the responsibility and the drawbacks of impedimenta. Men should be instructed that one canteen full of water should be more than sufficient for one day if self-denial and judgment is used. The establishing of water-tanks all over a maneuver ground is an unwise departure from actual field conditions.

One permanent camp or two camps do not fulfil the ideal conditions, but for the instruction of militia are perhaps better than moving over a large territory. It serves the end of more thorough instruction of officers and men in the matter of learning the ground, and has the advantage of giving a refuge at night where men may recuperate and officers be enabled to receive theoretical instruction.

One large camp is preferable to two small ones on account of the *instruction* and *assembly* of the officers. Tactically two camps are better, but for the theoretical instruction of officers, the one large camp is preferable.

The majority of officers and men have never had thorough instruction in field work. While it may be said that any instruction according to correct principles is good, it is only by supplementing the theoretical part with the practical working out the thing on the ground that any lasting good can be obtained. It is unquestionably true that the higher commanders are those who profit most by maneuvers, but it also opens up a field for the activities of company officers in which they may make fine records for themselves and records that will be noticed, remembered and appreciated. Officers learn the value of aggressiveness and of celerity and secrecy of movement. They learn that their patrols must secure information without themselves being seen, they soon find out that an advance guard is for the purpose of clearing the way for the main body, and they push forward with energy; they learn that timidity causes annoying delay and possible disaster, they soon learn that it is impossible to go too fast before contact and that it is almost impossible to go too slow after contact is thoroughly established against large bodies.

What has usually obtained at the maneuvers has been a tardy and timid advance and a precipitate attack on gaining contact, which is the direct opposite of correct procedure. This matter is set forth in memorandum instructions No. 1, First Brigade, Provisional Division, Camp Atascadero, California, August 10, 1904, with general comment by Colonel Wagner on pertinent associated subjects.

A memorandum was partially prepared with especial reference to the cavalry and field-artillery, but was not finished and issued on account of lack of time and because of the ease of giving verbal or special written instructions. It may be laid down, as an almost invariable rule, concerning artillery to *never* divide batteries into smaller divisions and then separate them, unless on recommendation of the artillery commander. Let the artillery commander use his arm together or separated only by such distances as may be consistent with fire control.

In maneuvers, as in war, there springs up a feeling of sympathy, camaraderie and mutual respect between the different arms of the service, and while it is true that as infantry advances or retires it takes along with it the artillery and cavalry, yet there are many times when the infantry can make use of the cavalry and artillery, and both of these, when circumstances require, may rely wholly upon the infantry.

At peace maneuvers can best be learned the functions of each arm and their mutual interdependence. At the maneuver camp is found the best surroundings for dispelling jealousies and prejudices engendered from lack of association among the officers of the three great arms, infantry, cavalry and artillery. To these three arms all things else in the service are mere accessories, desirable, but not of absolute necessity.

The drills and ceremonies at a maneuver camp should be executed under observation of inspectors detailed especially for this purpose and who should report to the brigade commander or the division commander in a manner similar to that prescribed for umpires.

Under the heading "The Umpires, with Reports of Operations and Discussions," a volume might be written, and all be useful. Umpires should be selected only from officers of much experience and proved ability, and preferably from the higher grades, certainly not below the grade of captain, that the weight of authority may be felt and accepted without question. Of the officers selected as umpires the senior should

be the chief umpire and the next two senior should be the senior umpires of the opposing forces, and the other umpires should be assigned from day to day to either side, thus securing a rotation beneficial to themselves and justice to the command to which assigned. The chief umpire should be one of the most capable of officers, particularly as a tactician, free from bias, tactful, dignified, resourceful, and who possesses a mentality broad enough to cover all the heterogeneous elements with which he will have to deal, yet with courage to state conditions as they are found or are developed. The senior umpires should likewise possess similar qualities of mind with high professional attainments. No one is more in need of a dispassionate and unbiased mind than an umpire. The careful instruction and supervision of Colonel Wagner at West Point, Kentucky, and Fort Riley, Kansas, made those maneuvers practically free from the bias of umpires. One of the most noticeable features in both the maneuvers at American Lake, Washington, and Camp Atascadero, California, was the active partizanship shown by many umpires. Nothing could be more injurious and wrong. The umpire must note conditions, giving particular attention to numbers, dispositions, morale, the effect of unexpected contact with hostile troops, how officers and men acted when surprised, the effect of fire, formations taken, etc. The rules for umpires have been published by the War Department. From observations at the maneuvers of 1903, there was seen to be *entirely* too few umpires; this was true at American Lake and at Manassas, and but for the unusual appreciation of this fact by him, and the timely and urgent requests of the division commander for officers, the maneuvers at Camp Atascadero would have irreparably suffered.

The uniform of the umpires should be so distinctive that they could be recognized at long distances, and the latitude allowed them in moving from place to place should be greatly increased.

An experimental blank report for umpires had been used by Colonel Wagner at West Point, Kentucky, and Fort Riley, Kansas, 1903, and was subsequently used at American Lake, 1904. This blank was not considered satisfactory by him, and effort was made to improve it. After much effort under difficulties at American Lake and immediately after my return therefrom I prepared a blank, and submitted proofs to the

chief umpire, Camp Atascadero, California. The blank was accepted. and with slight modifications was used at that camp. An umpire's note-book, originated by me, was also accepted and used. A recognition of the value of the report blank and the note-book is made on page 20 of the Report on Joint Encampment, etc., Camp Atascadero, California, August 13 to 27, 1904, without, however, any particular recognition of the originator.

Umpires should prepare their reports in duplicate, one copy going to the senior umpire of the force and the second copy to the commander affected. These reports are summarized by senior umpires and submitted to the chief umpire for his report.

At a discussion of a maneuver, at which all officers should assemble, the following should be read: The general and special situations of the problem, the orders issued to the forces, the reports of the two opposing commanders and the report of the chief umpire. The reading of these papers to be followed by a general discussion. The methods used at American Lake and at Camp Atascadero were far from satisfactory. We wish to hear what the chief umpire has to say in his report and not verbal expressions from other umpires unless they are called upon to elucidate obscure points that may be in issue.

An umpire should invariably be furnished with a mounted orderly; this is a question not open for argument, if *efficiency* is the object desired.

Under the heading "Breaking up and Return to Home Stations" it may be said that it is but a reversal of the movement to the camp with certain duties as to condition of ground, its police etc., which need not be gone into here.

Under the heading of "General Remarks," it may be said that combined maneuvers are the best device known for instructing officers and men in their duties for war, inexperience not being confined to the lower grades.

Maneuvers should not be held twice on exactly the same ground, hence permanent sites are not recommended unless of extraordinarily large extent. I consider this a tremendously important fact, just beginning to be appreciated, in view of the proposition to purchase sites, so nearly carried out last year.

All forces should engage in maneuvers on an average of once in three years, that every man who joins the colors may at least once experience the nearest approximation to war conditions possible to give him in time of peace.

THE ORGANIZATION, MAINTENANCE AND TRAINING OF FIELD-BATTERIES IN THE ORGANIZED MILITIA*.

By Lieutenant JOHN F. O'RYAN, Field Artillery. National Guard, S. N. Y.

IN this paper it will be attempted to show the great importance to the country of maintaining a field-artillery approaching the immediate demands of a state of war, the improbability of Congressional action providing for this in the regular establishment, and the possibility and means of creating and maintaining it in the organized militia. To do this in a manner to be of practical value, it is evident that the subject must be considered in detail, rather than to indulge in argument leading to general conclusions which might well be termed platitudes. Therefore in its proper place and under the headings hereinbelow set forth, will be pointed out in detail the means and methods of organizing, maintaining and training a suppositional battery of field-artillery in the militia and the state of efficiency which it can be brought to under the ordinary and possible conditions existing in the States; for it follows that if one unit of field-artillery under such conditions can in the militia be brought to the state of efficiency herein claimed as possible and attainable, then in the same manner *n* batteries can also be raised to the same standard of efficiency.

The subject for convenience and orderly treatment would seem to be properly divided as follows:

1. *The importance of the rôle of field-artillery in the past—a retrospect.*
2. *Its importance on our next battle-fields.*
3. *The necessity for the field-artillery to be existent and efficient at the outbreak of war.*
4. *The inability of the Regular artillery to supply the war demand.*

*"The subject [The Militia] is of so much moment in my estimation as to excite a constant solicitude that the consideration of it may be renewed until the greatest attainable perfection shall be accomplished."—Washington, Messages of the Presidents, Vol. 1, page 184.

"Nor should we now, or at any time, separate until we can say we have done everything for the Militia which we could do were an enemy at our door."—Jefferson, Messages of the Presidents, Vol. 1, page 320.

5. *Recourse to the organized militia and its present inability to meet the emergency.*

6. *The formation, maintenance and training of an efficient militia field-battery.*

   a. *Location of the battery,*
   b. *Housing and quarters.*
   c. *Officers—Physical and educational requirements, remuneration,*
   d. *Enlisted personnel, pay,*
   e. *Discipline,*
   f. *Materiel,*
   g. *Horses,*
   h. *Training of the battery and the standard of efficiency attainable.*

I. IMPORTANCE OF THE RÔLE OF FIELD-ARTILLERY IN THE PAST.

A student of military history reading the many narratives of the conduct of warfare and the fighting of battles by civilized nations must of necessity be impressed with the steady increase in the importance of the rôle of artillery from the time the first cannon were used at Crécy in 1346 to the fall of Port Arthur in the present year. At first regarded like every innovation with doubt and skepticism as to its value, we observe the first great stride toward its acknowledged effectiveness made at the battle of Marignano in 1515, where the crude guns of the French won for them a brilliant victory over the Swiss forces. Thereafter the tactical uses of artillery varied with the several great military leaders who occupied European attention, until about the year 1765, but it may be said that throughout this period the artillery arm came more and more into favor and use. In 1765 the great improvements and changes introduced by Gribeauval in the French artillery made so marked an advance that he has been termed the father of modern field-artillery. (Wagner's "Organizations and Tactics," p. 304.) The results of his work made possible Napoleon's wonderful uses of artillery in his campaigns. Instead of the sporadic boom of the rude cannon at Crécy, we now hear the continuous thunder and roar of the artillery of the Guard at Friedland, Wagram and Borodino as it prepares the way for the advance of the Emperor's legions. Yet the Napoleonic era was not the culmination of artillery improvement. Since his time we observe the same onward march of progress, but at an increased gait, for the shrapnel and rifled gun now came into use. At the time it was predicted that the destructive effects

of shrapnel would be so great as to make warfare impossible; but while its use had not the augured result, it greatly increased the importance of this arm on the field of battle. The work of the field-artillery in our Civil War needs no comment in this connection. But if the artillery had reached a great height in military esteem at the termination of the American Civil War, what should be said of it as a result of its record in the Franco-Prussian War? In this conflict we observe the artillery occupying the center of the military stage. Moving with the vanguard it was on occasions the first in the fight. At St. Privat, it will be remembered, the Prussian artillery was for a time in action nearly a mile in front of the infantry line. In such regard was the arm held that the proportion of artillery to the other branches of the service steadily increased as the war progressed. The number of batteries engaged seemed often to be limited only by the impossibility of finding positions for them all. "Only such batteries were left in reserve," says Hohenlohe, "as could find no room in the Gravelotte position. Seventy batteries, or 420 guns, had thus commenced firing before the masses of infantry were sent forward to the decisive attack." (Hohenlohe's "Letters on Artillery," p. 43). Referring to the battle of Sedan the same officer says:

> It must be sufficient for me to say that all the generals, and particularly those who command the artillery, were filled with the idea that as much artillery as was available should be employed as soon as possible, and that none should be kept in reserve. * * * * * * Everywhere the artillery pushed to the front quite close to the enemy, even into the line of skirmishers. * * * * * There were thus five principal groups which, *with their* 540 *guns*, fired at the same time at the same target.—Hohenlohe's Letters on Artillery, p. 51.

In the South African War the heavy guns of the Boer forces in the first period of the war were of great value to them, and the British Army for heavier *materiel* had to avail itself of the naval guns or improvised carriages. When the Boers lost their artillery the end came.

With respect to the part which the artillery has played in the present war in the Far East, the professional observations of our own and foreign military observers are not yet available, but from all that can be learned from non-professional sources, it would appear that the hostilities in the East con-

stitute a decisive and tragic illustration of the dominant importance of the artillery arm.

2. THE IMPORTANCE OF THE ARTILLERY ON OUR NEXT BATTLE-FIELDS.

This can be but a prediction based upon military history, but to one who had even glanced through the records of the past the facts are convincing that for an army without a numerous and efficient artillery to engage in war with any of the great powers would be disastrous. Two quotations under this heading will suffice to support this conviction.

> With the enormous range of the present artillery the guns can turn their fire upon many parts of the hostile line without even changing their position, and this great mobility and the destructiveness of their projectiles have further added to their power to such a degree that it seems probable that field-artillery will in future wars *play a part compared with which even its greatest achievements in the past will seem insignificant.* (Wagner's "Organizations and Tactics," p. 333.)

> Up to the present the artillery fight which precedes each crisis of the battle has not been considered as of a decisive, but only as of a preparatory character, or at the most it has been held to mark the development of the action. It will probably be otherwise in the future since shrapnel and double-walled shell produce such a murderous effect *that the fight may be considered as decided in favor of that side whose artillery has overcome that of the enemy in the artillery fight and can now turn the full weight of these projectiles on the other arms of the enemy.* (Hohenlohe, p. 275.)

3. NECESSITY FOR FIELD-ARTILLERY TO BE EXISTENT AND EFFICIENT AT OUTBREAK OF WAR.

The American public mind, concerning itself with a military topic, turns naturally and instinctively for instructive material to the Civil War. That great conflict will be for years to come a valuable field for military study; but with respect to preparedness for battle, it furnishes an example of necessary tactical inertia at its outbreak, which should be appalling instead of reassuring when we contemplate the possibilities. The unpreparedness of the North was fortunately neutralized by the unpreparedness of the South. Let us consider the difference between our military preparedness in 1861 and that of Prussia in 1866 and of Germany in 1870. Fort Sumter was

fired upon April 12, 1861, yet more than three months elapsed before the Federal Army engaged the Confederate forces at Bull Run, and even then suffered for its lack of preparation and training. In 1866, however, the war between Prussia and Austria was commenced, the engagements and battles of Trautenau, Burkersdorf, Skalitz, Gitschin and Königgrätz fought and the war terminated, *all in a period of seven weeks.* On July 19, 1870, France declared war against Germany. On August 2d, or fourteen days later, 30,000 French crossed the German frontier and took the town of Saarbruck. Two days later occurred MacMahon's defeat at Weissenberg, and on the 6th of August, or *eighteen days* after the declaration of war, witnessed the great battle of Worth. The existing hostilities in the Far East further illustrates the quickness with which blows are dealt the enemy after the rupture of friendly relations.

Nations like individuals are periodically called upon to protect and defend their interests, and at times their very existence, by force. To do this successfully they must be prepared in all that goes to make that force a speedy and effective agency. If hostilities must be entered upon speedily after the declaration of war, the army to be effective must have an efficient artillery. To be efficient the artillery must be numerous, well officered, well equipped, well disciplined and skilled in the use of its weapons and in the care and handling of its horses. Now what is the minimum of time within which a number of such batteries can be produced after the outbreak of war? It is comparatively a simple problem to produce in peace times two field-batteries from one regular battery. The officers are divided between the two organizations, as are also the non-commissioned officers, the drivers, cannoneers and horses. Additional regular officers are assigned to complete the required number, new equipment is issued to one of the batteries and recruits and horses are sent to both to fill up to the limit. The problem is similar to that of bringing two batteries on peace footing up to war's demand. The officers are competent, all important positions in the batteries are filled by the old soldiers, practically every one of whom becomes an assistant instructor more or less valuable in educating the new men. In the same way the green horses are trained not only by the men, but by the nucleus of old horses. In an incredibly short time the two batteries are ready for service.

Batteries in war time have had to refit to this extent as a result of casualties. At La Bourget on December 24, 1870, there was not a horse in the Fourth Light and Fourth Heavy Batteries of the German artillery which had not received at least a slight wound. At Flavigny, two horse-batteries of the German corps artillery lost 139 horses, or 70 per cent. per battery. Referring to the same battle, Hoffbauer says: "Some of the German batteries lost all of their officers, others all or nearly all of their horses, while a few lost nearly three-quarters of their men." (Wagner's "Organization and Tactics," p. 327). There were many Civil War instances of high percentage of battery casualties familiar to all. In all such cases, however, there was left a nucleus with a name and traditions, a trained personnel and an *esprit de corps* with which to weld the new men and horses into an efficient new whole. But how different is the problem when many wholly new batteries are to be organized. The governor of one of the States, upon the outbreak of war, is asked to furnish, say, ten field-batteries. The batteries begin by being handicapped because of the high percentage of incompetent officers among those who would be commissioned. That would be the first disheartening setback toward efficiency. The men being practically all recruits and the horses all green would add to the difficulties of the problem. The men of the batteries must now be instructed and trained in horsemanship on green horses, and in grooming, feeding and caring for them; in trumpet calls, saber signals, harness drills and care of harness, driving drills, school of the battery, pistol practice, care of the breech mechanism and of the pieces, in field repairs, in estimating distances, in the use of the range-finders, telescopic sights, fuses and tools, in code signals, entraining and detraining the battery, loading wagons, making and breaking camp, interior economy, cooking, camp sanitation, minor practical problems in exterior ballistics, hasty demolition, and elements of artillery-field fortification. Surely no artillery officer will claim that a number of such aggregations of men, horses and equipment can be molded into efficient batteries of field-artillery, capable of taking the field against the enemy in less than six months' time. Such organizations could therefore at best but constitute an inchoate reserve to be utilized when developed and prepared, if at that time the war had not terminated.

If our next war is to find us in a state of preparedness, our

field-artillery must be existent and efficient at the outbreak of hostilities.

4. INABILITY OF THE REGULAR ARTILLERY TO SUPPLY THE WAR DEMAND.

In a war of any magnitude in which the military forces of the nation would be called upon to participate, the number of the field-batteries required would not be less than two hundred, but probably many more. It has been mentioned that the Germans in a single battle (Gravelotte) placed in action seventy batteries, and at another (Sedan) ninety batteries, against the French. The total number of field-batteries in the German Army at that time, including the general reserve, is not at hand, but it was considerably greater than the number herein metioned as a probable minimum for our army in war time.

The Japanese maintain in their regular artillery 114 field-batteries. The German regular field-artillery consists of *540 batteries* with approximately 4,000 officers and 90,000 men. The Russian government planned to have 1,000 six gun batteries by the end of 1903. (Notes of Military Interest, War Dept., 1901.) *In our regular army we have but 30 field batteries.* When we keep in mind the gigantic disparity between this handful of artillery and what we would need in war, it must be apparent that the regular artillery even as a nucleus, would almost be lost. Moreover these 30 batteries are not all light batteries, for this number includes the siege and mountain batteries of the army.

Under the preceding heading we have considered the impracticability, under modern war conditions, of organizing a number of efficient volunteer batteries after the commencement of hostilities. The rapid expansion of the army field-batteries into double the number of efficient batteries, while practicable in peace times as we have noted above, could not be so readily accomplished in war time, for these reasons. The batteries would be on a peace footing and would have to recruit up to war footing in both men and horses. This influx would impair efficiency for a time, and would give the officers and non-commissioned officers all they could do to get these additions up to standard before taking the field. The regular artillery could not supply the officers for the new batteries thus created. Upon the outbreak of war, with the increase of the army,

a great number of general and field-officers would be created from among the regular artillery-officers. Thus most of the batteries would promptly lose their captains who would become field-officers, some of them taking command of volunteer infantry regiments, others of coast-artillery districts and of field-artillery battalions. It is evident that by reason of promotions, assignments, volunteer commissions and details, the regular field-artillery would not only be unable to furnish an appreciable number of officers for new batteries at the outbreak of war, but would, in fact, be sadly in need of officers to replace those lost as above. At this date, six years after the Spanish War increase in the regular artillery, we hear constant complaint from army sources that the artillery has not yet fully assimilated the influx of commissioned war appointees. Under these conditions would not such an expansion of the regular field-artillery simply have the effect of substituting sixty batteries of mediocre efficiency for half that number of batteries prepared to take the field and effectively fight their guns? And in any event would not the field-artillery so increased still constitute but a small nucleus of the requisite field-artillery force?

5. RECOURSE TO THE ORGANIZED MILITIA AND ITS PRESENT INABILITY TO MEET THE EMERGENCY.

Perhaps the unpreparedness for war of the militia field-artillery as a whole can be most readily illustrated by reference to a memorandum of Colonel Parker on the Armament of Militia Artillery, which appeared in the September, 1903, number of the JOURNAL. It is as follows: "As a result of the recent inspections the following has been found to be the number and kind of guns now in possession of the Militia:

Gatling gun, caliber .45	75
Hotchkiss gun	9
Hotchkiss revolving gun	1
3-inch muzzle loading rifle	34
12-pounder Napoleon	41
3.2-inch B. L. R.	73
Naval Gattling	1
Gatling gun, cal. 30	2
Colt's automatic gun	1
3-inch naval howitzer	2
6-pounder brass gun	2
6-inch B. L. R	3
	244

Eliminating from consideration this entire assortment of weapons, except the 3.2 B.L.R., we find that the militia of the country have approximately the *materiel* for but eighteen four-gun batteries. But even these do not constitute efficient fighting agencies without a trained personnel and proper motive power. As to these, Colonel Parker says that many batteries of the militia have but a dismounted training, because few States will spend the proper amount for horses. In some States, owing to the cost of ammunition, *the men never see their guns fired.*

It is probably not underrating the militia artillery too much to say that there are not more than half a dozen batteries throughout the entire country which could be prepared for active service in any reasonable length of time.

What is certain is that the militia field-artillery at the present time is wholly unable to meet the emergency of war.

6. THE FORMATION, MAINTENANCE AND TRAINING OF AN EFFICIENT MILITIA FIELD-ARTILLERY.

a.—Location of the battery. No matter what intelligence, spirit or tactical ability a battery commander may possess, he is, as to the material means with which he is to work, limited by the amount of funds which the State or Government will furnish to obtain the same. The question of finance is therefore the first necessarily considered. In the State of New York it fortunately furnishes no question. This State has been liberal in the appropriation of funds with which to house the various commands of the State forces. Under the law of New York State it is the duty of the city of New York to provide for the construction and maintenance of armories for all commands quartered in that city. The spirit in which the city of New York has undertaken this work may be noted from the following table showing the cost of land and of armories for the several commands stationed in New York City. These figures may be of interest to the militia throughout the country:

COMMAND	LAND	BUILDING	TOTAL
Seventh Infantry	Owned by City	Built by Regiment	
Eighth Infantry	Owned by City	$300,000	
Ninth Infantry	$437,000	342,000	$779,000
Twelfth Infantry	208,000	290,000	498,000
Thirteenth Coast Artillery	Old (figures not at hand)		
Fourteenth Infantry	Same		

COMMAND	LAND	BUILDING	TOTAL
Twenty-second Engineers.....	265,000	$318,000	$584,000
Twenty-third Infantry.....	Owned by State		
Forty-seventh Infantry.....	Owned by State		
Sixty-Ninth Infantry.....	792,000	606,266	1,398,266
Seventy-first Infantry.....	445,000	617,300	1,062,300
First Battery F. A.....	116,000	170,900	286,900
Second Battery F.A.....	In temporary quarters owing to fire		
Third Battery F. A.....	Old (figures not at hand)		
Troop C.....	43,500	423,000	466,500
Squadron A.....	350,000*	186,000	

These buildings are architectural ornaments which adorn the city. They are heavily constructed, and in most instances would furnish secure places of refuge. Most of them are equipped with all modern conveniences and have elevators, electric lights, shower baths, gymnasium, library, rifle range, magazine, kitchen to cook for entire command, containing full equipment and latest devices of the modern hotel kitchen, refrigerating rooms, etc. The armories of the mounted commands have in addition tan-bark ring, stalls, feed rooms, harness and saddle rooms, workshop with full line of tools, lathes, etc. The business acumen of the city of New York, in thus seeking to better in every way the efficiency of that portion of the militia of New York quartered within its limits, might well be followed in other States.

The field-battery in the militia should be organized and located in the outskirts of a city or large town. Every militia command must of necessity be recruited from the population in the vicinity of the armory. The greater this population, the greater should be the number of applicants for enlistment, and the greater the number of such applicants the stricter may the battery commander be in his selections. The duties of the personnel of the modern battery are so numerous and diverse, and in many repects so technical, that a certain percentage of the men should be skilled mechanics and machinists. These are more readily obtained in large centers of population. Other men would be selected for the possession of intelligence desirable in connection with the use of range-finders, sights and instruments, or because of the probability of their becoming good gunners. There are further reasons for such location which will be considered under the heads of "Personnel" and "Discipline." Some objections, however, are to be made to the city location. The most important training of the bat-

*The armories of the Eighth Infantry and Squadron A are on the same plot of ground; it cost $350,000.

tery must be had in the field. It is only by constant practice in the field under conditions approaching actual service that the battery may acquire any real fighting efficiency. The preparation for action, formation of lines, selection of position, of cover for the reserve, estimation of ranges, target-practice at known and unknown ranges and at fixed and moving targets, construction of gun-pits, preparation of the foreground, co-operation of the support, the supplying of ammunition from the reserve, same from the train, the selection of and advance to the new position, retirement, marches, bivouacs, etc., cannot be practiced in an armory. Neither can they be practiced in the streets of a city. In the militia, owing to other demands, as little time as possible should be lost in going to and returning from the practice ground. Therefore if the field training of the battery were alone considered it would be desirable to locate its armory in some sparsely populated county of the State possessing a diversified *terrain*, where the command immediately upon leaving the armory would be in the field of its exercises. It will, therefore, be found expedient to compromise between these extremes and to locate the armory for the field-artillery in the suburbs of a large town or city where the proper material for recruiting can be drawn upon, and where a short march of a mile or two will take the battery to the open country. In such location also land will be much lower in price than in the heart of a city. This may be illustrated by the fact that the armory of the First Battery, N. Y., located in Sixty-sixth street, near Central Park West, which is in the heart of the Borough of Manhattan, stands upon a plot of ground 174′x100′, for which the city of New York paid $115,000. For this same sum a tract of land more than twice as large can be purchased on the outskirts of the city, thus providing the battery with a drill hall in which more than a section can drill, and so located that a short march therefrom will place the command in the field.

b.—Housing and Quarters. The location of the armory having been fixed in the suburbs, we now come to consider the building itself. The drill shed, or ring, covered with glass and metal roof on steel arches, would occupy most of the plot, and should not be less than 200′x300′ in area. The stable, occupying the floor beneath the ring, should be light, with ample air space, and should have stall accommodation for at least one hundred horses. In most armories the pistol range is purposely

so shut off from the rest of the building that the sound of the firing is scarcely noticeable a short distance from the firing-room. In this connection an innovation is suggested which would seem of practical value. This is that the range be located on the ground floor with the stable, and so arranged that the horses get the full sound of firing. If military history demonstrates one fact, it is that in war great results have been influenced by small incidents, and that these incidents were most often preventable if peace training had been practicable enough to provide against them. What is the efficiency of a militia battery possessing horses highly trained in the drill if amid the noise and excitement of a riot they become so frantic as to be unmanageable? Yet similar conditions have again and again existed in warfare. Battery horses should be accustomed not only to gun fire, but to the more annoying and nerve-racking sound of smallarm fire. Horses that were terror-stricken by the sound of pistol firing in our armory paid little or no attention to it after a few months of target-practice over a short unenclosed range in rear of the stalls, and this, although the firing reports were accentuated by reason of the echo.

Pistol practice should be much more practical than as now conducted. With an armory of the size above prescriped there would be space for a pistol range at least fifty feet in width. This would enable the practice to be had at moving silhouette targets. If we reflect that the use to which the pistol is put by field artillerymen in active service is principally individual self-defense, the need of much practice at moving targets with rapid fire will be apparent. The present system of allowing unlimited time for each shot is of little value except as elementary work. On any conceivable occasion when the battery as such would use the pistol, there would be great confusion, rapid movement of "targets" and rapid firing. The only way to effectually prepare for this occasion is to have the practice conditions approach *its* conditions as nearly as possible.

The firing line on the pistol range should be so arranged that one or two of the guns could be conveniently run thereon for subcaliber practice.

The gymnasium need not be elaborately fitted. They are not used to any great extent, at least in the commands about New York City. The setting-up exercises are compulsory, and, aside from these, what little time there is to be expended about the armory outside of the drills and indoor practice, the men,

if they go in for athletics, generally prefer to utilize in preparation for field and track athletic events.

Shower baths and a plunge are almost requisites in a mounted command. A small library should keep on file American military periodicals.

The quarters of both officers and enlisted men should be well equipped, but appropriately furnished. This means *simply* furnished. There has existed for many years in the militia an earnest rivalry among companies in the matter of sumptuous furnishings in company rooms. Some of these rooms in consequence more resemble a reception room of some pretentious mansion than they do the quarters and locker rooms of a military command. The non-commissioned officers of the battery should have quarters separate and apart from the quarters of the drivers and cannoneers. Distinctions of this character serve as an ever-existing reminder of the distinction between non-commissioned officers and privates, and make for better discipline. Bowling alleys, pool or billiard tables and other similar forms of amusement, while proper in the army, for obvious reasons, are decidedly out of place in a militia armory and should not be permitted. Their sponsors are usually those who are in the service for other reasons than the promotion of military efficiency. An armory is not a clubhouse.

The most marked innovation in the matter of armory quarters to be suggested in this paper, and one which it is submitted will do more to improve military efficiency than any other, is the following: First, it might be well to point out that what the militia soldier lacks at the present time is what in art is termed "atmosphere." He is a soldier for so small a part of the seven days of the week that unless he is a born soldier his civilian characteristics predominate and are detectable when he is on duty, and these characteristics are often times incompatible with military requirements. To keep him in the military atmosphere of the armory and under the restraint of military discipline for a greater portion of the week than at present obtains is admittedly desirable, but is not practicable under existing conditions. This, however, can readily be accomplished. The quarters of the enlisted men should include a dormitory, and it should not only be permissible for the unmarried men to live in the armory, but they should be encouraged to do so upon condition that they fulfil prescribed

military duties. The State would offer to such men, without money charge to them, what they would have to pay highly for at a hotel or club; that is, a good dormitory, cot, bedding, soap, towels, light, heat, library, shower and plunge baths—in fact, a handsome home. Such men could run a mess and give one of the battery cooks permanent employment, and thus obtain their meals at cost. That such an opportunity would be immediately taken advantage of by a great number of enlisted men will hardly admit of dispute. The cost of the above plan to the State could therefore be limited practically to the cost of laundry work and toilet supplies, an insignificant sum in view of the gain in military efficiency. For these privileges the men would be required to answer reveille each morning, followed by fifteen minutes of setting-up exercises, and a bi-weekly fire call, call to arms, or other drill, which would be in addition to regular drills of the battery. The conditions mentioned are matters of detail, and could be added to or modified in any way that experience and particular requirements might show to be more desirable. Under this system, these men would in a short time become what might be termed half regular soldiers. They would daily be under military restraint and discipline and daily under the influence of old soldiers who would hold all the positions of permanent employment in the armory, as shall be observed under the head of "Personnel." If thus one-fourth or one-fifth of the men of the battery had their permanent quarters in the armory, and daily performed some slight military duty for that privilege, it must be evident that these men would furnish a very superior homogeneous and disciplined nucleus for the battery command.

The matter of quarters for the commanding officer and the lieutenants and rooms for administration purposes, and for the first sergeant, quartermaster, commissary and veterinarian, presents nothing unusual.

[TO BE CONTINUED.]

PROMOTION BY SELECTION.

By Captain EVAN M. JOHNSON, Jr., Eighth Infantry.

PROMOTION by selection represents an ideal system under which the ablest and most deserving are advanced rapidly to the front, the inefficient are dropped out, and the army placed on a higher plane.

Is this method practicable, that is, will it secure the desired result?

It is the object of this paper to prove that not only it will not, but that it will work positive injury.

If doubt should arise as to fairness of the method of selection the entire army would be pervaded with discontent, the cry of favoritism be raised, and the mass of officers feel that they had no chance. They would perform their duties and studies perfunctorily, just well enough to keep in service, for take out of the heart of man the idea of reward and position, and there remains no incentive for individual effort. The tone and efficiency would not only be lowered, but low.

It is admitted that the idea of selection by promotion is good, that every effort will be made to have such selection honestly and fairly made, that officers constituting boards will be fair and honorable. And yet, in spite of all this, the assertion is made that any system of selection introduced in our army will be absolutely unfair, and seriously impair its efficiency.

There are two phases to consider—peace and war. Taking first, "peace," what are the bases on which the selection of an officer for promotion can be made? They are, his routine post or office duties, and his record at the various military colleges. Considering the first, "routine post or office duties": officers are scattered all over the territory of the United States; some in the Philippines, some in the West, some, perhaps, in Washington. Three officers of equal abilities are in the three different places. The one in the Philippines does a brilliant bit of field work, showing bravery and skill in handling troops; the second, in Washington, great executive ability as the head of some important office; he in the West does his work con-

scientiously and faithfully, but not having the opportunity, does only what the mass of officers do daily, his routine duty. Suppose that in other respects their records are equal, which of these officers is to be selected for promotion if they happen to come to the top of the list at the same time? Certainly not he who is doing his "duty" in the West, although in reality he may be the best of the three, and have simply lacked the final opportunity given the others. And of the other two, which one goes up, the clever office man or the clever soldier? Another case; one lieutenant commands a company for several years because his company commander is on detached service. He does it well and is reported upon for his efficiency in the routine reports of his post commander. A second in the same post is unfortunate enough to have his captain present and has no opportunity to show his ability except as a subaltern. Is the second to be overslaughed because he has had no chance? How is it to be decided in these cases which officer is the best?

There are, of course, flagrant cases in which men are notoriously unfit for promotions, but take the average officer, by what means shall it be determined whether he is to be selected? By the efficiency reports of his commanding officer?

In a post one commanding officer may grade all his officers as "Very Good." Another may grade this same set of officers as "Excellent." Men vary in their ideas of excellence, and in the above instance it is seen that two sets of officers, possessing equal merits, may be differently graded in two posts by their respective commanding officers.

Again, consciously or unconsciously, some commanding officers allow their personal feeling to influence their official reports, for they are only human.

An efficiency report does not afford a fair base for selection. Shall it be then by the amount of staff, detached service, etc?

Some colonels select their staff-officers because they are good fellows, others for their social qualifications, others for their abilities. How shall a board determine for which of the above reasons the position of staff-officer was given, and thus select the proper candidate for promotion?

As to detached service; it is so well known that influence is constantly used to secure detail that it is not worth while discussing the *merit* (?) which, as a rule, obtained the detail.

In short, it may be without question affirmed that there is no possible way in which an officer's record in time of peace

can be used as a fair guide for selection for promotion, for all officers have not equal opportunities, and to select from the few whom chance and influence have favored would be rank injustice.

As for the fairness of boards; it is not believed possible that one can be constituted whose selections will be fair. By this it is not meant that its intentions will not be fair, but its action. It is hardly likely that any board will contain members who do not know, personally, some of the officers who are to be passed upon. Take an instance in which, of the names submitted, one is personally known to the members as a most excellent officer, the records in all cases being good. Members would not be human were they not biased toward the man they know.

Again, supposing they know none of the officers whose names are submitted, but the President or Secretary of War should say, "Gentlemen, I do not wish to influence your action, but everything else being equal, it would please me to see so and so, whom I know to be a most excellent officer, promoted." Boards are composed of men, and "everything else being equal," why should they not carry out the desires of him to whom they look for honors. That these boards will be subjected to social and political pressure there is no doubt.

It is an unfortunate fact that politics and influence have been a considerable factor in securing advancement in the past, and it is doubted whether these elements will ever be eliminated.

A prominent senator whose son is an army officer is naturally going to do everything possible to secure the advance of that son, and that advancement, no matter how worthy, will be viewed as another example of the results of influence. The army will become a political camp, every one pulling for influence, no matter what orders are issued. There was a system of promotion by selection prior to the creation of the detailed staff, and all know that when an officer desired an appointment in one of the permanent corps he pulled every string he could, social, official, political, and that nine times out of ten it was the man with "the longest pull that got the persimmon." This condition would recur in an aggravated form were selection in the army, instead of a few staff-corps, made the rule.

As to the second method of selection, from college standing,

this is obviously so unfair that it is doubtful whether discussion is necessary, and yet the author has recently seen this advocated. To begin with, many officers never get the opportunity to go to the service schools. Commanding officers recommend officers for detail thereto for various reasons, some because they have stood well in the post schools, others because they need instruction or discipline, others as a matter of favor. It is not always that the best man in the regiment gets the opportunity to go, and if selection by this system is to be made, how about the unfortunate who has not had the chance?

Further, it is a well-known fact that it is not always the high-grade student that makes the best officer in command of troops. For this are required many other qualities than ability to grasp technicalities and recite. Study is needed, hard and constant study to keep an officer up in his profession, but because an officer graduated number six instead of number one in his class it will not be evident to the majority that number one must of necessity be the better all-around officer. The injustice to the many by creating a "Brahmin Class" of this kind, and the effect upon the others, and *morale*, can be easily understood.

And so, finally, it may be said that there appears no way by which promotion by selection may fairly be made, and even if there were, it is questionable as to whether the evils resulting would not be greater than the good. You *might* have a few pre-eminently brilliant men at the top, you *would* have a mass of sullen, discontented men at the bottom, a bad feeling to engender in an army now satisfied and willing.

The idea of putting younger men over older, and this would be the tendency of the system, is bad. Older men resent dictation from younger, feeling that knowledge and experience come with years and training. There are, of course, young men who are military prodigies, like Napoleon, but promotion by selection in time of peace does not make them; it takes war to discover their abilities.

All said and done no better system than the present, with perhaps one modification, can be devised for time of peace. There are no jealousies, no fears of injustice. Officers study, try to improve themselves and maintain a high professional standard. The post and service schools all tend toward this.

It has been claimed that we need some spur to incite officers to greater individual effort, that they are too sure of

their positions and promotions. This is not so. A good officer will do his work to the best of his ability at any time, and the "spur" of promotion by selection would not better his efforts; and there is to-day in the army an incentive in the shape of the general and detailed staff. Every officer with ambition looks forward to one of these details, and to this end uses every opportunity to bring himself professionally to the front. Details of this kind broaden an officer, make him fitter for higher command. They make him more prominent, better known and more liable to selection for promotion in case of war. Officers know this, and what greater incentive does the ambitious officer require?

All realize, also, that before promotion is obtained an examination must be passed, and no man likes to go before an examining board unprepared, the results of failure are too serious.

It has been claimed that for sentimental reasons boards sometimes pass officers not entitled to promotion, and this is perhaps true, although it is believed that the very great majority of officers are capable men, who, in the future, as in the past, will prove themselves competent to fill any position to which they may be called.

A change for the better might be made by amending the present law to the effect that after a second failure in mental examination an officer of over fifteen years' commissioned service, instead of being wholly retired as at present, be retired on half-pay with the grade held at the time. This would do away with the "sentiment" which occasions the passing of an incompetent officer on account of his length of service, and the hardship of returning him to civil life entirely unfitted therefor at an advanced age, and perhaps with a family to support.

In addition to this, commanding officers and inspectors should recommend for examination officers mentally or physically unfit for the duties of their grades. There is too much consideration shown in this matter. All officers should be examined physically before being promoted. If the standard for examination is not considered high enough it should be raised, either by increasing the requirements or the percentage.

By this means elimination would take place, which would increase promotion, put younger men forward in the field

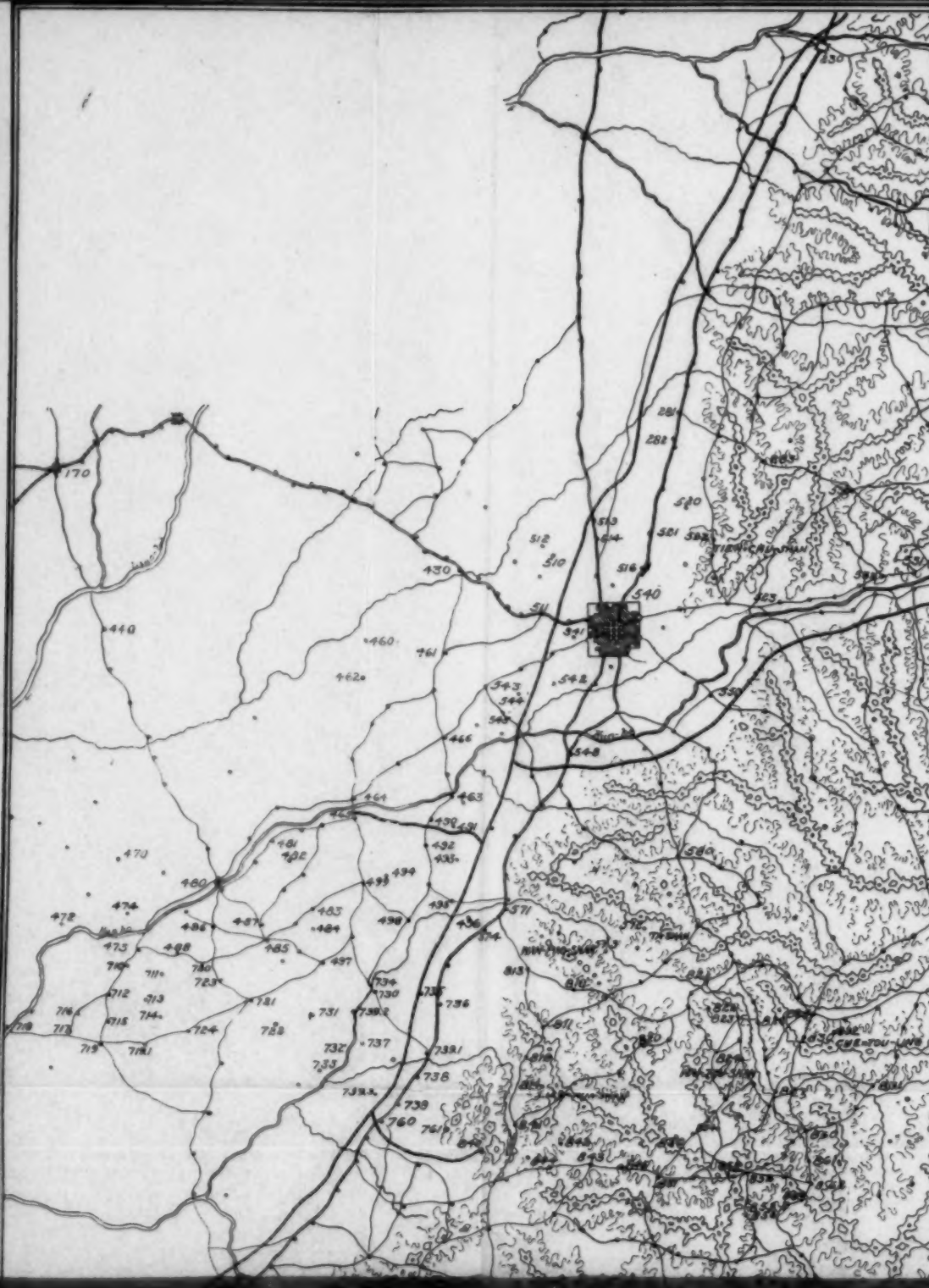
grades, and weed out the incapables, all without injustice or hard feeling.

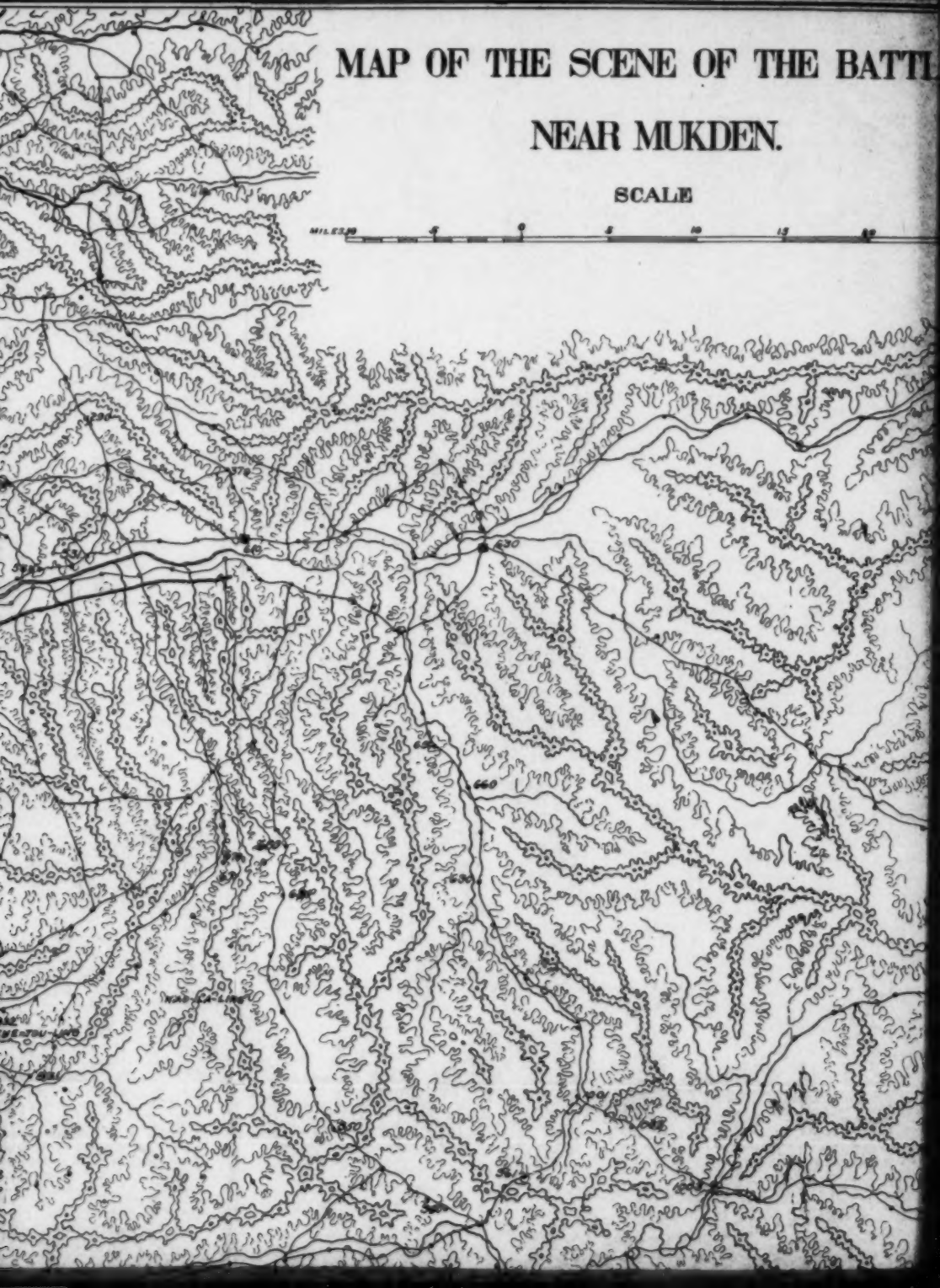
All said and done, there does exist in our service promotion by selection to be used at the only time when needed, *i. e.* during war. If the President deems an officer worthy of high command at such time, all that it is necessary for him to do is to give him a volunteer commission and let him prove himself. If it be shown that he has pre-eminent abilities he can, at the close of the war, be commissioned in the army with higher rank, for Congress has always shown itself willing to regard the wishes of the President in filling offices existing with those whom he nominates, and more, it has created offices for those specially deserving.

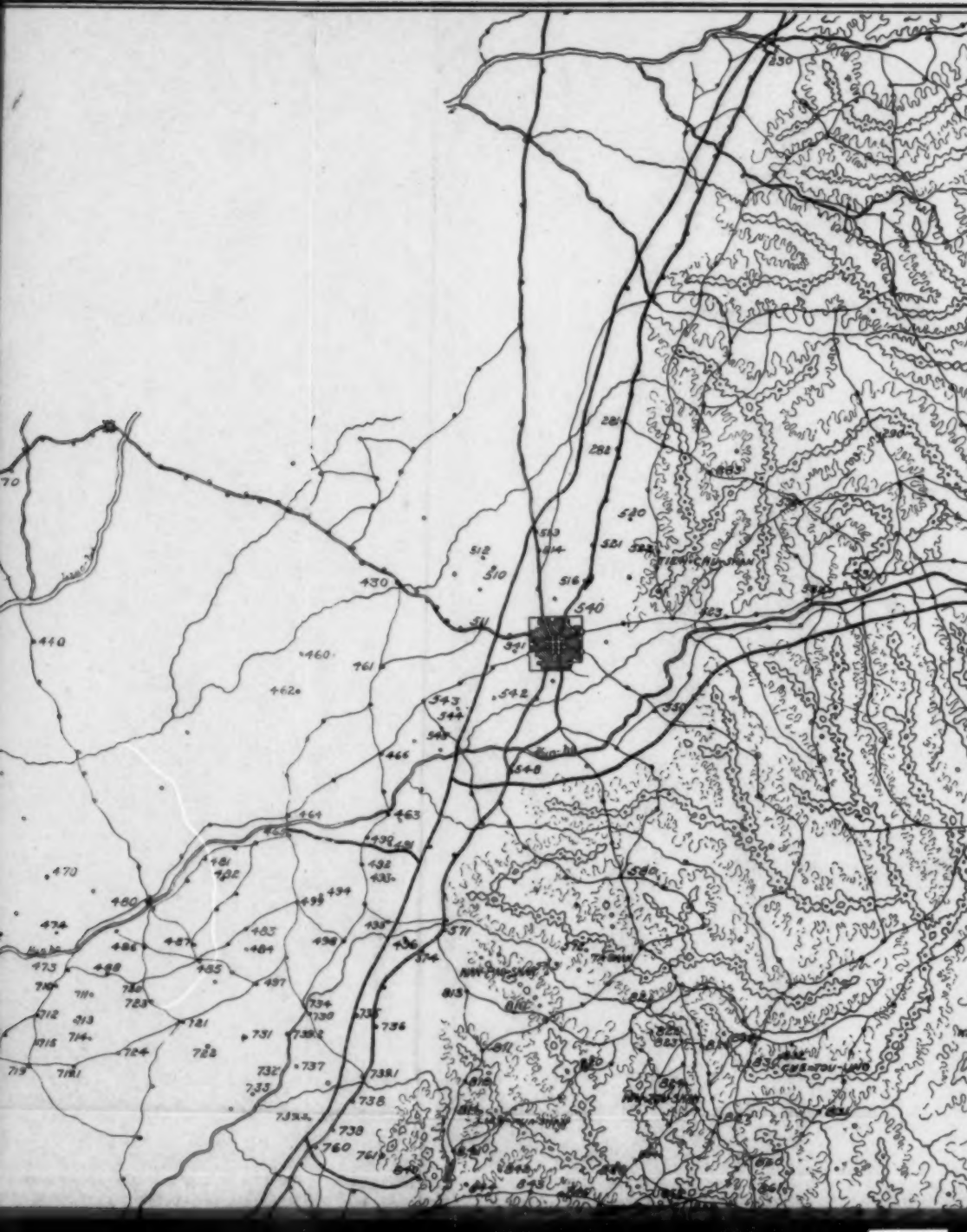
Other than this, selection should be limited to the colonels of the army, from whom generals should be selected. There is no one who was in service prior to the late war that cannot recall the bitter comment and discouragement of many an able officer who, on account of the inequalities of regimental promotion and methods of selecting the General Staff, was passed over by his juniors. This feeling would recur in an intensified and extended form should any such system as that proposed be put in force.

It is a strange thing that promotion by selection has been considered necessary for the army and not the navy. Both are military bodies and the arguments which apply to one apply with equal force to the other. It is admitted that a more capable body of officers than those of the United States Navy cannot be found in the world, and yet they have *promotion by seniority* to the highest grades. Why should this system produce different results in the army? As a matter of fact, it does not and will not. The agitation for the change comes from a few; the mass of officers are overwhelmingly against promotion by selection, and they know what is best for them and what they want.

"Let us have peace."

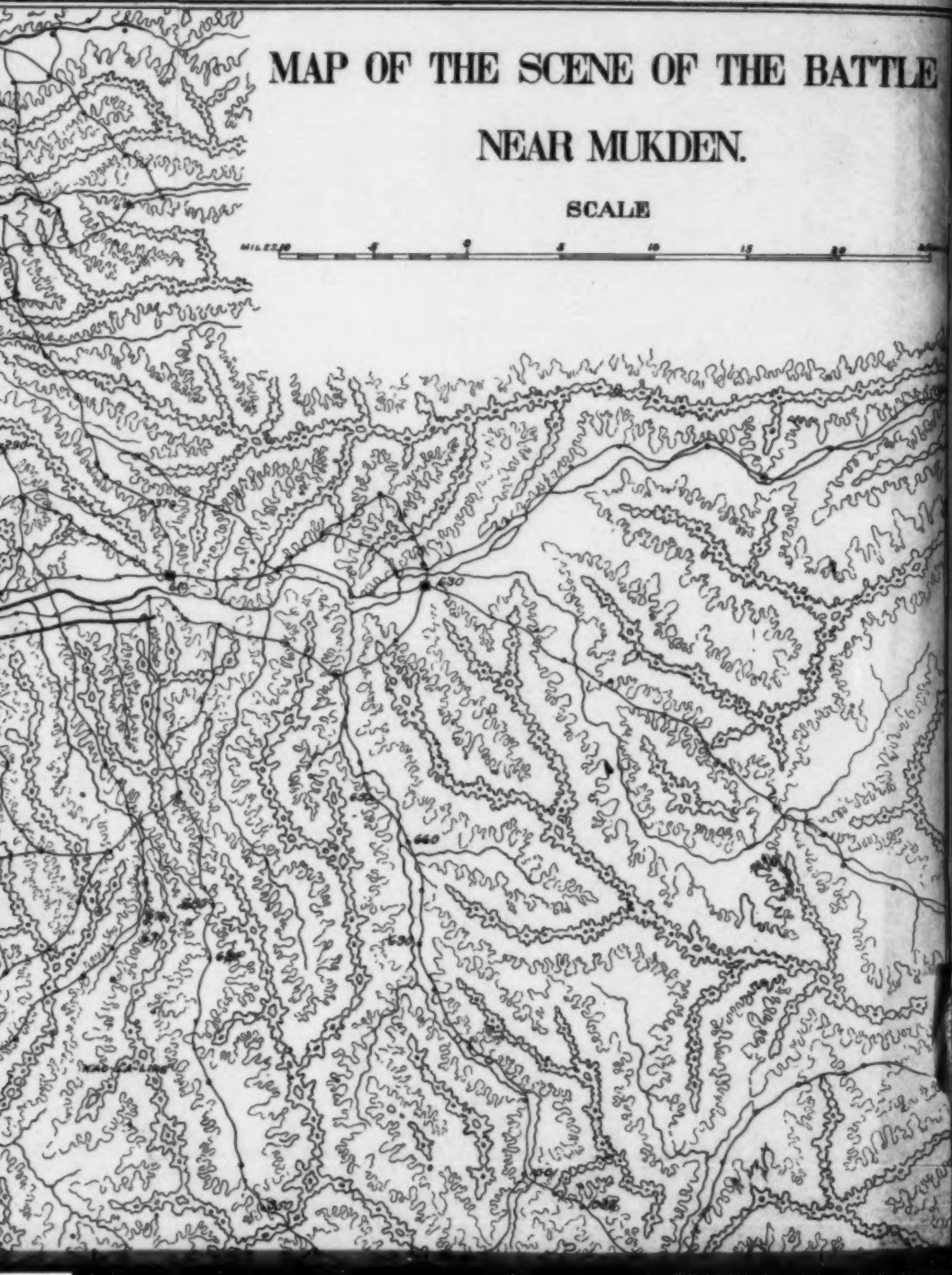


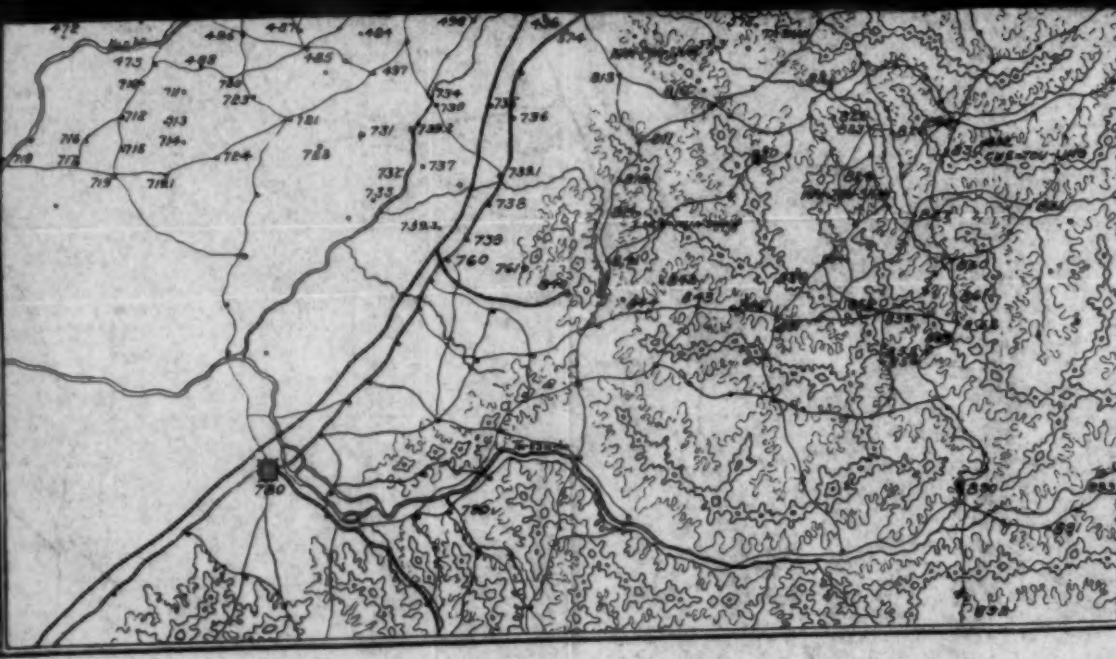

MAP OF THE SCENE OF THE BATTL
NEAR MUKDEN.
SCALE
MILES



MAP OF THE SCENE OF THE BATTLE NEAR MUKDEN.

SCALE





522	Chan-chia-kou	790	Haiao-tun-tau	378	Lan-ni-wa	512	Pu-chia-tzu
831	Chang-chia-sai	739.2	Haiao-tung-tai	488	Lao-chiao	881	Pu-ho
681	Chang-chia-tun	892	Hsi-ho-yen (road)	780	Liao-Yang	630	Sa-erh-hu-cheng
480	Chang-tun	531	Hsing-lang-tien	486	Li-chia-wo-pen	713	San-chen-pao
822	Chan-kon	170	Hsin-min-ting	497	Li-tu-jen-tun	572	San-chia-tsu
855	Chao-taian-ling	544	Hsin-pu	498	Lin-sheng-pu	841	San-kuai-shih
724	Chen-shao	541	Hsi-ta	573	Liu-chang-tun	950	San-lung-kou
485	Chen-tan-pu	719.1	Hsiu-shr-pu	730	Liu-san-chia-tsu	514	San-tai-tsu
811	Chein-hua-tieh	717	Hsu-chia-wo-pen	487	Liu-tan-kou	571	Sha-ho-pu
960	Chien-ho-cheng	813	Huang-pua-tien	733	Liu-tung-kou	844	Shang-liu-ho-tzu
1002	Chien-ho-ling	670	Huang-ti	850	Ma-chi-shan	842	Shao-ta-kou
855	Chih-sien-fang	739	Huang-ti	680	Ma-chun-tuz	861	Shih-chiao-tsu
523	Chih-tai-tsu	810	Hu-chia	850	Mang-chia-fen	739.1	Shih-li-ho-tsu
718	Chiu-tou-kou	818	Hung-chia-tun	851	Mien-chin-pu	542	Shih-li-ma-tou
1001	Chiu-chan	717	Hung-chia-wo-pen	483	Meng-ta-pu	481	Si-kuan-tun
533	Chou-kuan-pu	530	Hu-shan-pu	463	Mo-chia-pu	470	Sau-fang-tai
481	Chou-kuan-pu	882	Hu-tu-ta	540	Mukden	495	Sau-fung-tai
840	Coal mines	548	Hun-ho-pu	990	Nan-tai-tsu	494	Su-chia-pu
516	Erh-tai-tsu	574	Ka-chia-pu-tsu	716	Niu-chiu	731	Suan-chia-tun
484	Erh-tai-tsu	825	Kang-tu-jen-shan	725	Pa-huang	905	Su-hu-pu
490	Erh-tai-tsu	852	Kao-cheng-sai	845	Pai-chia-tsu	543	Su-kuan-tun
733	Erh-tai-tsu	720	Ku-cheng-tsu	671	Pai-tsu-kou	711	Su-ma-pu
821	Feng-chia-pu	814	Ku-chia-tsu	736	Pan-chia-pu	863	Ta-ling
610	Fu-shun-cheng	739.3	Ku-chia-tsu	580	Pan-tzu-chai	853	Ta-men-tsu-ling
719	Ha-erh-pu	600	Ku-ho-tsu	510	Pei-ling	850	Ta-men-tsu-ling
493	Han-cheng-pu	890	La-ma-kou	734	Pei-yen-tai	440	Ta-min-tun
473	Hei-kou-tai	496	La-ma-tun	890	Pen-hai-hu	545	Ta-pu
513	Hsia-kun-tzu	460	La-mu-ho	883	Peng-chia-tsu	430	Ta-shih-chiao
843	Hsia-liu-ho-tzu	492	Lai-shen-pu	827	Pien-niu-liu-pu	723	Ta-tai
865	Hsiang-shan-tsu	721	Lang-tun-kou	880	Ping-tai-tsu,	474	Ta-tai-tsu
722	Hsiao-lao-chan-tun	737	Lang-tsu-chih				
491	Hsiao-su-chia-pu						

462	Ta-tzu-pu	1003	Wei-tsu-ku
891	Ta-yu-pu	464	Wo-chia-pu
854	Tai-chai-kou	893	Wo-lung-tsun
511	Tai-ping-chuang	482	Wu-chia-tun
7	Tai-tsu-ho	690	Wu-lung-kou
826	Tang-chia-tun	738	Wu-ti-tai-tzu
650	Ti-ta	550	Yang-chia-tun
230	Tieh-ling	466	Yang-shih-tun
710	Tou-pao	823	Yao-chien-hu-tun
822	Tung-chia-fen	760	Yen-tai
830	Tung-kou	472	Ying-tai-ta-tzu
732	Tung-shan-pu	521	Yu-lin-pu
712	Wa-chia-tsu	761	Yu-men-tzu
824	Wai-tou-shan		
520	Wang-chia-kou		
961	Wan-liu-ho		
499	Wau-chia-yuan-tzu		

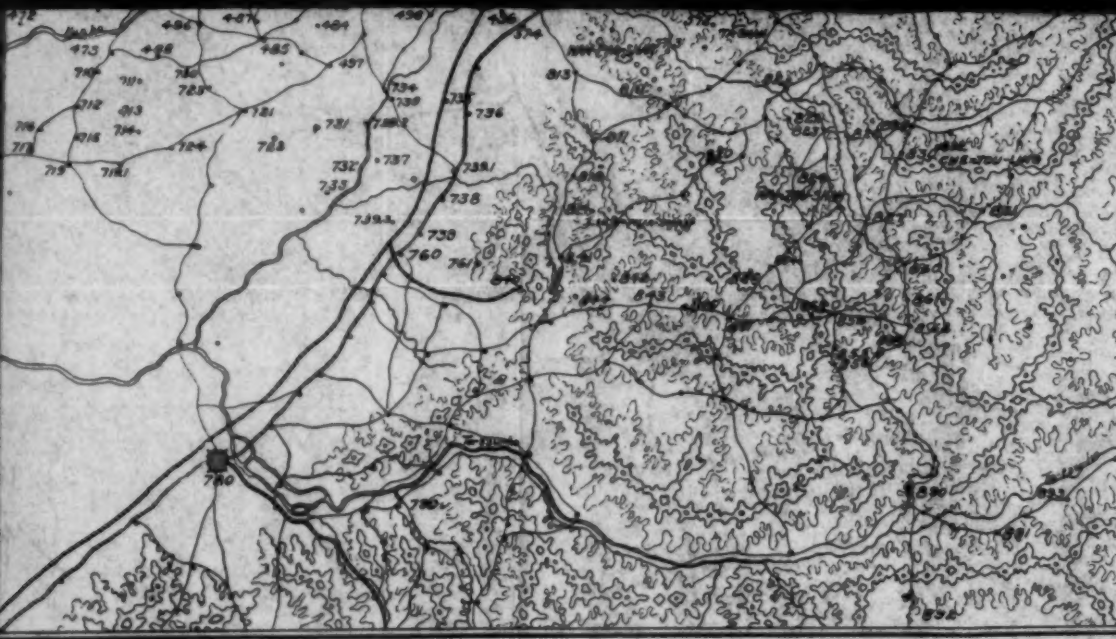
170 Hsin-min-ting
230 Tieh-ling
281 Pu-ho
282 Hu-tu-ta
283 Peng-chia-ton
290 La-ma-kou
379 Lan-ni-wa
430 Ta-shih-chiao
440 Ta-min-tun
460 La-mu-ho
461 Si-kuan-tun
462 Ta-tzu-pu
463 Mo-chia-pu
464 Wa-chia-pu
465 Su-hu-pu
466 Yang-chih-tun
470 Sou-tang-tai
472 Ying-tai-ta-tzu
473 Hei-kou-tai
474 Ta-tai-tsa
480 Chang-tan
481 Choo-kuan-pu
482 Wu-chia-tun
483 Meng-ta-pu
484 Ehr-tai-tsu
485 Chen-tan-pu
486 Li-chia-wo-pen
487 Lin-tan-kou
488 Lao-chiao
490 Ehr-tai-tsu

491 Hsiao-su-chia-pu
492 Lai-shen-pu
493 Han-cheng-pu
494 Su-chia-pu
495 Sou-fang-tai
496 La-mu-tun
497 Li-ta-yen-tun
498 Lin-sheng-pu
499 Wu-chia-yuan-tzu
510 Pei-ling
511 Tai-ping-chuang
512 Pu-chia-tsu
513 Hsia-kan-tsu
514 San-tai-tsu
520 Wang-chia-kou
521 Yu-lin-pu
522 Chan-chia-kou
523 Chih-tien-fang
530 Hu-shan-pu
531 Hsing-lung-tien
532 Chiu-shan
540 Mukden
541 Hsi-ta
542 Shih-li-ma-ton
543 Su-kuan-tun
544 Hsin-pu
545 Ta-pu
548 Hun-ho-pu
550 Yang-chia-tun
571 Sha-ho-pu

572 San-chia-tsu
573 Liu-chang-tun
574 Ka-chia-pu-tsu
580 Pan-tsu-chai
610 Fu-shun-cheng
630 Sa-erh-hu-cheng
650 Ti-ta
660 Ku-hu-tsu
670 Huang-ti
671 Pai-tsu-kou
680 Ma-chun-ta
681 Chang-chia-tun
690 Wu-lung-kou
710 Tou-pao
711 Su-ma-pu
712 Wa-chien-tsu
713 San-chien-pao
714 Hsu-chia-wo-pen
715 Pa-huang
716 Niu-chu
717 Hung-chia-wo-pen
718 Chi-tai-tsu
719 Ha-erh-pu
719.1 Hsin-erh-pu
720 Ku-cheng-tsu
721 Lang-tung-kou
722 Hsiao-lao-chan-tun
723 Ta-tai
724 Chen-chao
730 Lin-san-chia-tun

731 Suan-chia-tun
732 Tung-shan-pu
733 Ehr-tai-tsu
734 Pei-yen-tai
735 Liu-tung-kou
736 Pan-chia-pu
737 Lang-tsu-chieh
738 Wu-ti-tai-tsu
739 Huang-ti
739.1 Shih-li-ho-tsu
739.2 Hsiao-tung-tai
739.3 Ku-chia-tsu
760 Yen-tai
761 Yu-men-tsu
780 Liao-Yang
790 Hsiao-tun-tsu
810 Hu-chia
811 Chien-huang-hua-tieh
812 Hung-chia-tun
813 Huang-hua-tien
814 Ku-chia-tsu
820 Mang-chia-fen
821 Feng-chia-pu
822 Tung-chia-fen
823 Yao-chien-hu-tun
824 Wai-tou-shan
825 Kang-tu-yen-shan
826 Tang-chia-tun
827 Pien-niu-lu-pu
830 Tung-kou

831 Chang-chia-sai
832 Chan-kou
840 Coal mines
841 San-kuai-shih
842 Shao-ta-kou
843 Hsia-lin-ho-tsu
844 Shang-liu-ho-tsu
845 Pai-chia-tsu
850 Ma-chi-shan
851 Mien-chin-pu
852 Kao-cheng-sai
853 Ta-men-tsu-ling
854 Tai-chia-kou
855 Chao-tsien-ling
856 Ta-men-tsu-ling
860 Ping-tai-tsu
861 Shih-chiao-tsu
862 Hsiang-shan-tsu
863 Ta-ling
890 Pen-hei-hu
891 Ta-yu-pu
892 to Hsi-ho-yen
893 Wo-lung-tsun
950 San-lung-ku
960 Chiang-ho-cheng
961 Wan-liu-ho
990 Nan-tai-tsu
1001 Chin-tou-ku
1002 Chien-ho-ling
1003 Wei-tsu-ku



Chan-chia-kou 790
Chang-chia-cai 739.2
Chang-chia-tun 891
Chang-tun 531
Chan-kou 170
Chao-tsian-ling 544
Chen-shao 541
Chen-tan-pu 719.2
Chein-hua-tieh 717
Chien-ho-cheng 813
Chien-ho-ling 670
Chih-sien-fang 739
Chih-tai-tsu 810
Chiu-tou-kou 819
Chiu-chan 717
Chou-kuan-pu 530
Coal mines 268
Erh-tai-tsu 548
Erh-tai-tsu 574
Erh-tai-tsu 825
Erh-tai-tsu 850
Erh-tai-tsu 720
Fu-shun-cheng 814
Ha-erh-pu 739.3
Han-cheng-pu 660
Hei-kou-tai 990
Hsia-kun-tsu 496
Hsia-liu-ho-tsu 460
Hsiang-shan-tsu 492
Hsiao-lao-chan-tun 721
Hsiao-su-chia-pu 737
Hsiao-tun-tsu 379
Hsiao-tung-tai 892
Hsi-ho-yen (road) 780
Hsing-lung-tien 486
Hsin-min-ting 497
Hsin-pu 498
Hsi-ta 573
Hsiu-shr-pu 719.1
Hsu-chia-wo-pen 730
Huang-pua-tien 487
Huang-ti 735
Huang-ti 850
Hu-chia 680
Hung-chia-tun 890
Hung-chia-wo-pen 851
Meng-ta-pu 483
Mo-chia-pu 463
Mukden 540
Nan-tai-tsu 990
Niu-chiu 716
Pa-huang 715
Pai-chia-tsu 845
Pai-tsu-kou 671
Pan-chia-pu 736
Pan-tsu-chai 580
Pei-ling 510
Pei-yen-tai 734
Pen-hsi-hu 890
Peng-chia-tou 283
Pien-niu-liu-pu 827
Ping-tai-tsu, 860
Lan-ni-wa 379
Lao-chiao 488
Liao-Yang 780
Li-chia-wo-pen 486
Li-tu-jen-tun 497
Lin-sheng-pu 498
Liu-chang-tun 573
Liu-san-chia-tsu 730
Liu-tan-kou 487
Liu-tung-kou 735
Ma-chi-shan 850
Ma-chun-tun 680
Mang-chia-fen 890
Mien-chin-pu 851
Meng-ta-pu 483
Mo-chia-pu 463
Mukden 540
Nan-tai-tsu 990
Niu-chiu 716
Pa-huang 715
Pai-chia-tsu 845
Pai-tsu-kou 671
Pan-chia-pu 736
Pan-tsu-chai 580
Pei-ling 510
Pei-yen-tai 734
Pen-hsi-hu 890
Peng-chia-tou 283
Pien-niu-liu-pu 827
Ping-tai-tsu, 860
Pu-chia-tzu 512
Pu-ho 981
Sa-erh-hu-cheng 630
San-chen-pao 713
San-chia-tsu 572
San-kuai-shih 841
San-lung-kou 950
San-tai-tsu 514
Sha-ho-pu 571
Shang-liu-ho-tzu 844
Shao-ta-kou 842
Shih-chiao-tsu 861
Shih-li-ho-tsu 739.1
Shih-li-ma-tou 542
Si-kuan-tun 461
Sou-fang-tai 470
Sou-fung-tai 495
Su-chia-pu 494
Suan-chia-tun 731
Su-hu-pu 465
Su-kuan-tun 543
Su-ma-pu 711
Ta-ling 863
Ta-men-tzu-ling 853
Ta-men-tzu-ling 850
Ta-min-tun 440
Ta-pu 545
Ta-shih-chiao 430
Ta-tai 723
Ta-tai-tsu 474
Ta-tsu-pu 462
Ta-yu-pu 891
Tai-chai-kou 854
Tai-ping-chuang 511
Tai-tsu-ho 7
Tang-chia-tun 826
Ti-ta 650
Tieh-ling 830
Tou-pao 710
Tung-chia-fen 822
Tung-kou 830
Tung-shan-pu 732
Wa-chia-tsu 722
Wai-tou-shan 824
Wang-chia-kou 590
Wan-liu-ho 961
Wau-chia-yuan-tzu 499
Wei-tsu-ku 1003
Wo-chia-pu 462
Wo-lung-tsun 893
Wu-chia-tun 482
Wu-lung-kou 690
Wu-ti-tai-tzu 738
Yang-chia-tun 550
Yang-shih-tun 466
Yao-chien-hu-tun 893
Yen-tai 760
Ying-tai-ta-tzu 472
Yu-lin-pu 521
Yu-men-tzu 761

170 Hsin-min-ting
230 Tieh-ling
281 Pu-ho
282 Hu-tu-ta
283 Peng-chia-ton
290 La-ma-kon
379 Lan-ni-wa
430 Ta-shik-chiao
440 Ta-min-tun
460 La-mu-ho
461 Si-kuan-tun
462 Ta-tsu-pu
463 Mo-chia-pu
464 Wa-chia-pu
465 Su-hu-pu
466 Yang-shih-tun
470 Sau-fang-tai
472 Ying-tai-ta-tzu
473 Hei-kou-tai
474 Ta-tai-tsu
480 Chang-tan
481 Choo-kuan-pu
482 Wu-chia-tun
483 Meng-ta-pu
484 Ehr-tai-tsu
485 Chen-tan-pu
486 Li-chia-wo-pen
487 Lin-tan-kou
488 Lao-chiao
490 Ehr-tai-tzu

491 Hsiao-su-chia-pu
492 Lai-shen-pu
493 Han-cheng-pu
494 Su-chia-pu
495 Seu-fang-tai
496 La-mu-tun
497 Li-ta-yen-tun
498 Lin-sheng-pu
499 Wu-chia-yuan-tzu
510 Pei-ling
511 Tai-ping-chuang
512 Pu-chia-tsu
513 Hsia-kan-tsu
514 San-tai-tsu
520 Wang-chia-kou
521 Yu-lin-pu
522 Chan-chia-kou
523 Chih-sien-fang
530 Hu-shan-pu
531 Hsing-lung-tien
532 Chiu-shan
540 Mukden
541 Hsi-ta
542 Shih-li-ma-ton
543 Su-kuan-tun
544 Hsin-pu
545 Ta-pu
548 Hun-ho-pu
550 Yang-chia-tun
571 Sha-ho-pu

572 San-chia-tsu
573 Liu-chang-tun
574 Ka-chia-pu-tsu
580 Pan-tsu-chai
610 Fu-shun-cheng
630 Sa-erh-hu-cheng
650 Ti-ta
660 Ku-hu-tsu
670 Huang-ti
671 Pai-tsu-kou
680 Ma-chun-ta
681 Chang-chia-tun
690 Wu-lung-kou
710 Tou-pao
711 Su-ma-pu
712 Wa-chien-tsu
713 San-chien-pao
714 Hsu-chia-wo-pen
715 Pa-huang
716 Niu-chu
717 Hung-chia-wo-pen
718 Chi-tai-tsu
719 Ha-erh-pu
719.1 Hsin-erh-pu
720 Ku-cheng-tsu
721 Lang-tung-kou
722 Hsiao-lao-chan-tun
723 Ta-tai
724 Chen-shao
730 Lin-san-chia-tun

731 Suan-chia-tun
732 Tung-shan-pu
733 Ehr-tai-tsu
734 Pei-yen-tai
735 Liu-tung-kou
736 Pan-chia-pu
737 Lang-tsu-chieh
738 Wu-ti-tai-tsu
739 Huang-ti
739.1 Shih-li-ho-tzu
739.2 Hsiao-tung-tai
739.3 Ku-chia-tsu
760 Yen-tai
761 Yu-men-tau
780 Liao-Yang
790 Hsiao-tun-tzu
810 Hu-chia
811 Chien-huang-hua-tieh
812 Hung-chia-tun
813 Huang-hua-tien
814 Ku-chia-tsu
820 Mang-chia-fen
821 Peng-chia-pu
822 Tung-chia-fen
823 Yao-chiao-hu-tun
824 Wai-tou-shan
825 Kang-tu-yen-shan
826 Tang-chia-tun
827 Pien-niu-lu-pu
830 Tung-kou

831 Chang-chia-sai
832 Chan-kou
840 Coal mines
841 San-kuai-shih
842 Shao-ta-kou
843 Hsia-lin-ho-tsu
844 Shang-liu-ho-tzu
845 Pai-chia-tsu
850 Ma-chi-shan
851 Mien-chin-pu
852 Kao-cheng-tai
853 Ta-men-tsu-ling
854 Tai-chia-kou
855 Chao-tsien-ling
856 Ta-men-tsu-ling
860 Ping-tai-tsu
861 Shih-chiao-tsu
862 Hsiang-shan-tsu
863 Ta-ling
890 Pen-hsi-hu
891 Ta-yu-pu
892 to Hsi-ho-yen
893 Wo-lung-tsun
950 San-lung-ku
960 Chiang-ho-chang
961 Wan-liu-ho
990 Nan-tai-tsu
1001 Chin-tou-ku
1002 Chien-ho-ling
1003 Wei-tzu-ku

FIELD AND SIEGE OPERATIONS IN THE FAR EAST*

By Colonel WILLIAM R. LIVERMORE, U. S. A.
Corps of Engineers.

III

Battle of the Shaho.

[Russians 270,000. Japanese 270,000.]

KUROPATKIN having successfully withdrawn his troops after the battle of Liao-Yang and having been materially reinforced soon after, published on the 2nd of October his famous proclamation announcing that the time had come to take the offensive. He has been severely criticised for this proclamation and for his rashness in throwing his troops against the enemy's intrenchments when at Liao-Yang, he had been unable to defend his own. It must be considered, however, that at Liao-Yang the Japanese carried the Russian intrenchments by turning their flanks, and the results of this battle might easily inspire him with confidence in the ability of good troops by their skillful disposition and numerical superiority on the decisive point to counteract the advantages which intrenchments afford to the passive resistance of troops armed with modern weapons. Kuropatkin's plan was to concentrate a large army under Stackelberg against the right flank and rear of the Japanese position, while making a simultaneous attack along the whole line to divert the attention of the Japanese and to prevent them from leaving their trenches to reinforce the threatened flank. If this plan succeeded he could roll up the entire line and then march on to the relief of Port Arthur. Whereas if he waited he would have to meet the combined forces of Oku, Nogi and Kuroki now in his front, and of the Army of Port Arthur and of the new levies from Japan, all of which finally met him at the battle of Mukden.

---

*Continued from July Number of the Journal.

Owing to the small scale of the maps it is generally impossible to show anything but the front lines of the opposing armies.

The Russian forces were organized as follows:*

The Army of the East under Stackelberg, included the First and Second Siberian Corps and the Third Corps formed in Manchuria. The Army of the Center comprised the Fourth Siberian Corps (Soroubaieff) and the First Russian Corps (Meyendorff). The Army of the Right was composed from left to right of the Tenth Corps (Sloutchevesky) the Seventeenth Corps (Binderlink) the Sixth Corps (incomplete) and the Fifth Corps. In advancing to the attack large gaps were left between the armies and the co-operation was not complete.

On the 4th of October an advance was made all along the line and the Japanese outpost at Bentsiapudza (Ping-tai-tzu) was driven in. On the same day the Russians reoccupied the railroad station at the Sha-ho. On the 6th the Cossacks advanced almost to the Yentai mines. On the 8th the Russian cavalry crossed the Tai-tzu-ho above Pen-shi-hu.

The Russian accounts of this battle now at hand are very meagre, and it will be best to follow the course of events from day to day from published reports of the Japanese.

On the 9th of October the Russian position, as reported by the Japanese, was as follows:—

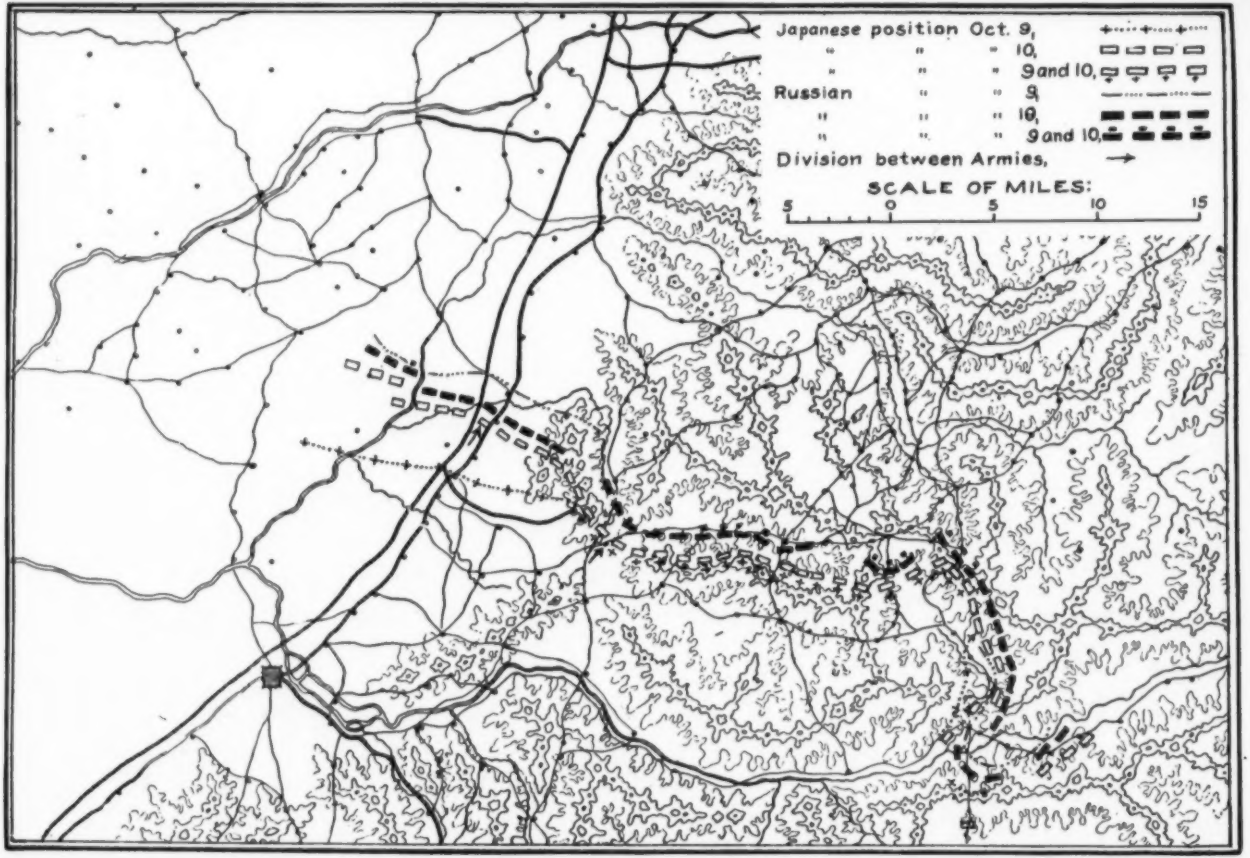
In front of the Japanese Right Army (Kuroki) a brigade of infantry, 2,000 cavalry and two guns south of the Tai-tzu-ho, which turned the right flank of the Japanese position and cut the communications between Hsi-ho-yen and Pen-shi-hu. Another brigade of infantry with 1500 cavalry and eight guns immediately north of the Tai-tzu-ho, another mixed brigade near Ta-ling, a regiment at Mien-hua-pu and one at Pa-chia-tzu. These forces were all advancing south, followed by others. Two regiments of infantry at Shang-liu-ho-tzu and a regiment of cavalry at Hsia-tu-ho-tzu. A division at Shao-to-kou.

In front of the Japanese "Central Army" (Nodzu). About a division on the line connecting Chien-huang-hua-tien, Pan-chi-ao-pu and Lin-tang-kou on the morning of the 9th moving south.

In front of the Japanese "Left Army" (Oku), the Russian forces were not active and their main strength appeared to be in the neighborhood of Lin-tang-kou and Sun-chi-tun.

On the Japanese side, Kuroki sent a column of troops to reinforce the garrison of Hsi-ho-yen. The Russians were at-

*Vida Battle of Shakhe River, Geo. de Salle, Journal of M. S. I. 136, p. 32.



BATTLE OF THE SHA-HO. I.
(Oct. 9-10, 1904.)

tacking Hsiang-shan and Pen-shi-hu. The Pen-shi-hu detachment was reinforced. Nodzu and Oku were fighting with Russians in front of them.

In the night of October 9–10, a large force of Russians arrived at Ta-ling and about a brigade at Tu-men-tzu-ling, and attacked the Japanese positions. Several hand to hand fights are reported. Pen-shi-hu and Tu-men-tzu-ling were reinforced. The Russians camped at close quarters along this line, and in the night they carried the heights east of Pen-shi-hu and those east of the road leading north from Pen-shi-hu.

On the 10th of October the Japanese retook these positions in a dense fog. The Russians were reinforced and the fighting was heavy along this line. At 11 A. M. the Russians charged the heights east of Hua-tien-kou and after a severe bayonet fight were repulsed. The right column of Nodzu's army occupied the heights east of Yu-men-tzu on the morning of the 10th. On reaching the heights east of Huangti, the left column attacked the Russians at Wu-li-tai-tzu without success.

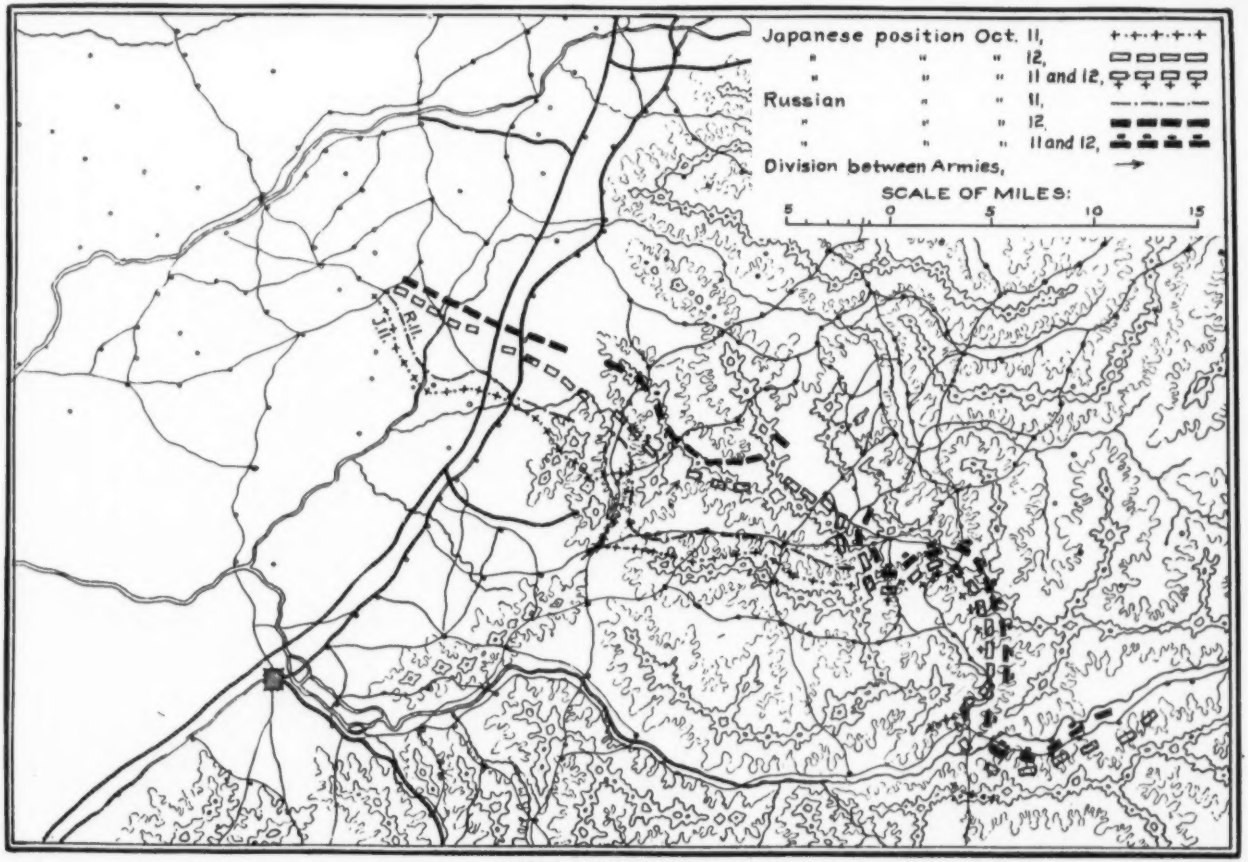
The right column of Oku's army having occupied the neighborhood of Ku-chia-tzu, made an attack in conjunction with the left column of Nodzu's army on the heights of Wu-li-tai-tzu and on Ehr-tai-tzu, thereby occupying a line extending from Shang-tai-tzu to Ehr-tai-tzu. Oku's central column carried Ta-tang-shan-pu. This left column attacked the Russians at Hsi-lao-shan-tun and advanced as far as Ho-chia-tun.

October 11 at 3 A. M. The Japanese garrison left at Hsien-chang made a night attack on the enemy in its front and drove him back to the north-east. The fighting was very heavy all day along the Japanese left from Ta-yu-pu on the Tai-tzu-hu to Pen-shi-hu, Ta-ling and Ta-men-tzu-ling. The Russians also occupied in force the line from Pa-chia-tzu to San-chia-tzu. Kuroki tried in vain to dislodge them.

Nodzu's right column cooperated with Kuroki in the attempt to carry San-chia-tzu and advanced in the direction of Ku-chia-tzu and of the district east of San-kuai-shih-shan. Nodzu's left column made an unsuccessful attack on the Russians at Shih-li-ho.

Oku's right column, continuing the attack, advanced to the neighborhood of Lin-san-chia-tzu and his left column to Li-ta-jen-tun, threatening the Russian right flank and rear.

The Japanese report of the fighting on the 12th says that



BATTLE OF THE SHA-HO. II.
(Oct. 11–12, 1904.)

"while Nodzu was completely successful in breaking the Russian center and thereby relieving the pressure on Kuroki, Oku's part in the day's fighting was brilliant. He advanced his Left Army with great rapidity and attacked the Russian right with such energy that Kuropatkin was compelled to weaken his center at a critical time in Nodzu's attack in order to go to the relief of his Right Army, then severely pressed by Oku's troops." The turning movement of Oku was half successful, and so weakened the Russian center, that as Nodzu advanced, Kuropatkin was compelled to order a retreat of the entire army to the next line of hills. This practically broke the line between his left and centre, thus putting the left of his army in the position in which it was on the morning of the 13th, when Kuroki was attempting to surround several of its divisions north of Pen-shi-hu.

So far as the grand tactical situation is concerned it would appear that it would have been better for the Russians to have made the Army of the East strong enough, and to have pushed it on vigorously enough to accomplish its purpose of turning the Japanese flank. The Russian center need not have been as strong as it was at first to resist the advance of the Japanese center. If the Russian right fell back to a position prepared for defense it could keep open the road to Mukden and the Russians could afford to lose a piece of the railway if they could in this way rout one-half of the Japanese Army.

In several of the battles of this war the army on the offensive has tried to support its main attack by attacks all along the line, to prevent the defense from reinforcing the point of attack. This reduces the oblique to the parallel order and loses the advantage of presenting the forte and withdrawing the foible. In all parts of the field, excepting that where the main attack is to be made, it would appear to be desirable for the army on the offensive to enjoy the advantages of a passive defense in a fortified position, unless vastly superior in strength, in which case it might be desirable to overwhelm the enemy at all points. The chief difficulty with the Russians, however, appears to be that while they were trying to turn the Japanese right and the Japanese were trying to turn the Russian right the superiority of the Japanese in maneuvering enabled them to make good use of all their troops while those of the Russians were either in each other's way or out of the way altogether, so that the advantage of the initiative

was in a measure lost. It is said, however, that if Stackelberg had pushed on instead of withdrawing he would have found little to oppose him.

October 12th, the Russians who had cut the communications between Pen-shi-hu and Hsi-ho-yen fell back. Their attack in the direction of Pen-shi-hu was repulsed and the Japanese sent a detachment to Shih-chiao-tzu to cut off their retreat. The central column of Kuroki's army occupied the heights north of Pa-chia-tzu and then of Ma-ehr-shan and the heights toward Mang-chia-pen. The left column occupied the heights north of Shao-ta-kou.

The right column of Nodzu's army, which had been cooperating with Kuroki at San-chia-tzu, went to the heights northwest of San-kuai-shih-shan and then pursued the Russians in the direction of Ku-chia-tzu.

The Russians intrenched at Chien-huang-hua-tien.

The central column of Oku's army after a fight at Lang-tzu-kai advanced to Hsiao-tung-tai and Lin-san-chia-tzu. The right column to Wu-li-kai (northwest of Shih-li-ho) and Lung-wang-miao (west of Liu-tang-kou). The left column bombarded Pei-yen-tai.

October 13th, early in the morning, a large body of cavalry under Prince Kotohito Kanin outflanked the Russian left and drove back the reserves.

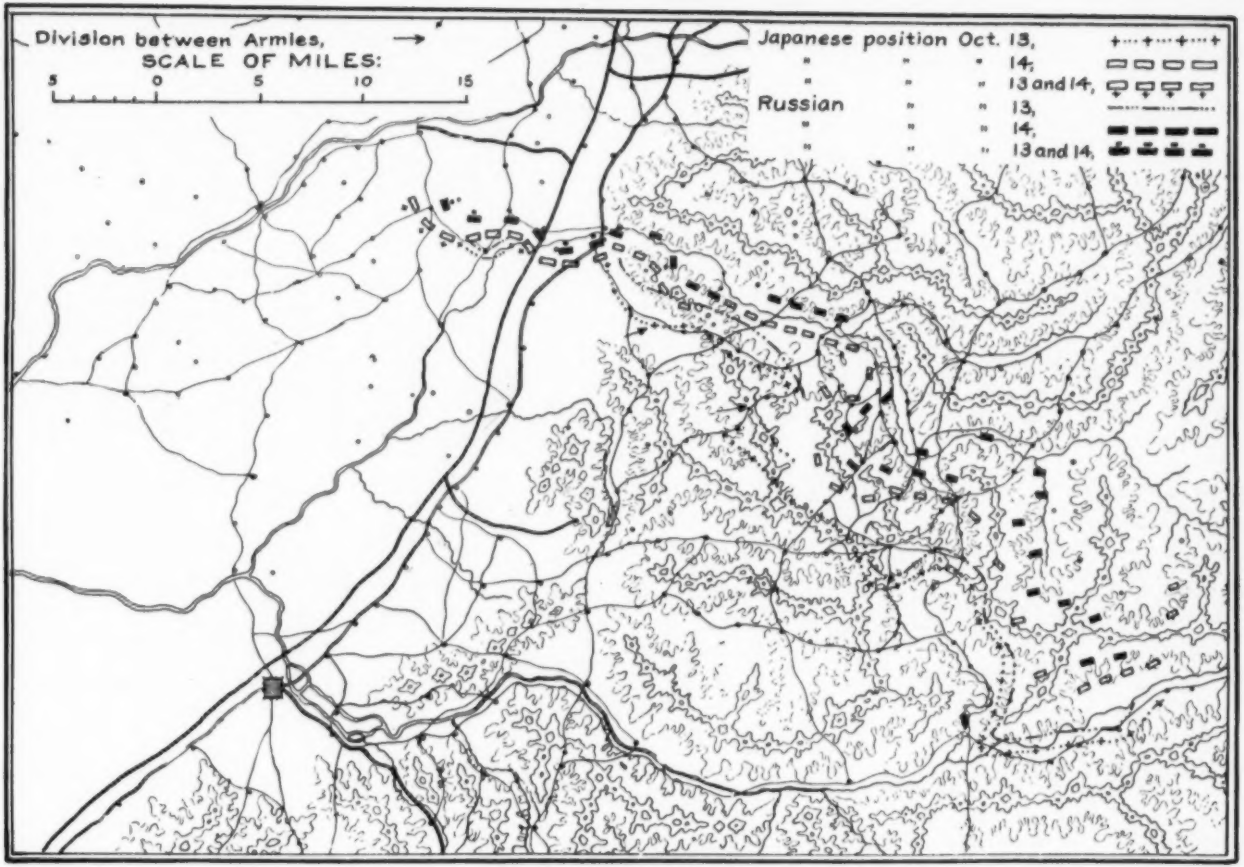
Kuroki's right column attacked Chao-tsin-ling. His central column also occupied the heights at Lien-hua-shan and Ma-ehr-shan and the left column pursued the Russians from the heights north of Shao-ta-kou.

The nature of the ground retarded the progress of Kuroki's army.

Nodzu's army, turning to the northeast, carried the heights north of Ku-chia-tzu and occupied Hu-chia and Mang-chia-fen.

The right column of Oku's army occupied Pan-chia-pu and, reinforced by the reserves, attacked the Russians near Huang-hua-tien. The Russian batteries at Chien-huang-hua-tien offered a stubborn resistance. The central column occupied Liu-san-chia-tzu and then attacked Sha-ho-pu. The left column attacked Lin-shan-pu and carried Man-chia-yuen-tzu.

October 14. On the extreme right of the Japanese position Prince Kanin continued the fight on the left bank of the Ta-tzu-ho near Wo-ling-tun. Japanese reinforcements arrived at Hsi-ho-yen.



BATTLE OF THE SHA-HO III
(Oct. 13–14, 1904.)

The Russians opposed to Kuroki at Pen-shi-hu began to retreat at 11 A. M. The Pen-shi-hu detachment pursued. In the afternoon the Russians also retreated from Ta-ling and Tu-men-tzu-ling.

The Pen-shi-hu detachment advanced as far as Ping-tai-tzu and the neighborhood of Pien-niu-chia-pu which the Russians fortified.

Kuroki's right column advanced in the direction of Tai-chia-tao, his central column occupied the heights northeast of Chin-chuang-shan and his left column the heights north of Lien-hua-shan, and then all pursued the Russians to the Sha-ho at Ta-shan and Feng-shi-pu. A detachment of the reserves occupied Wai-tou-shan.

Nodzu's army attacked the Russians at Pu-tsao-wo and reached the line of the Sha-ho, driving the Russians to the north of the river.

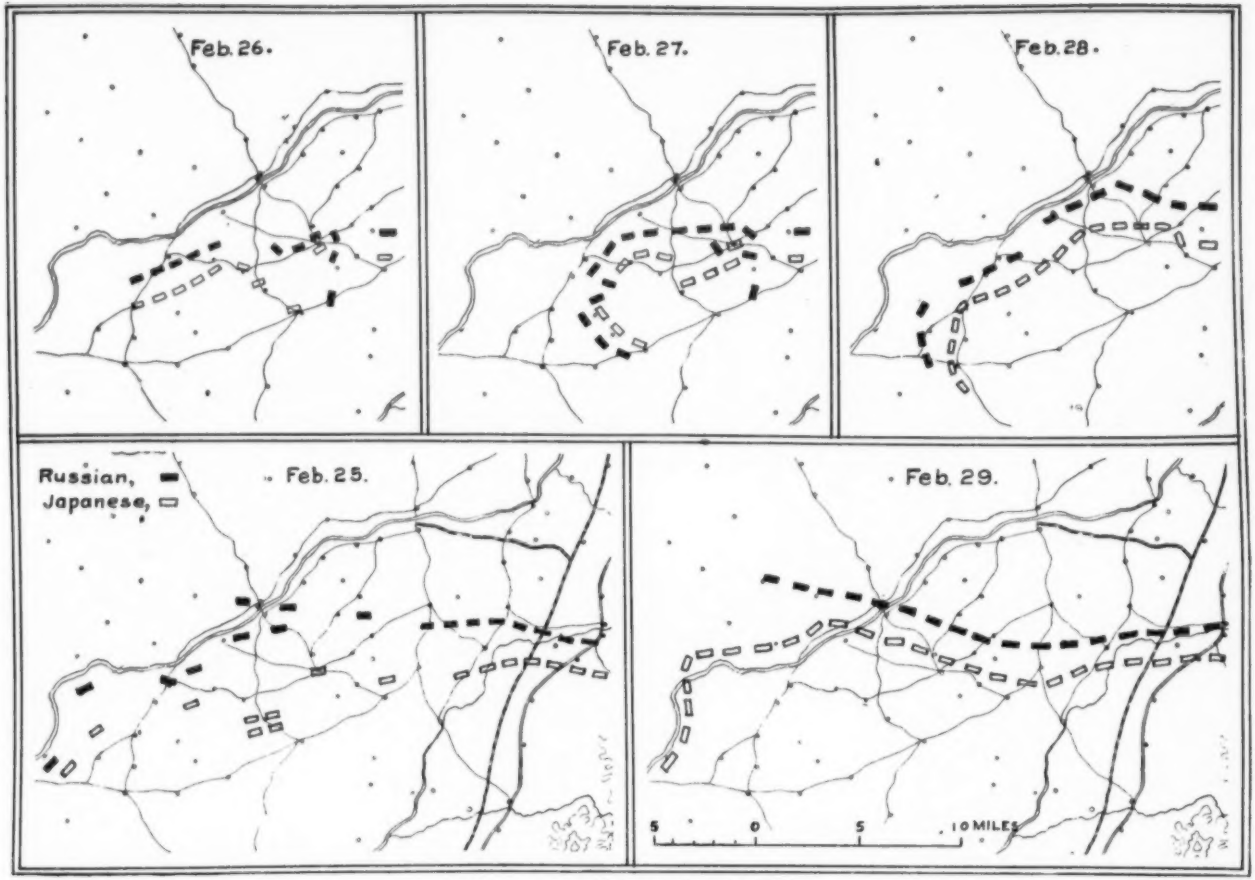
Oku's right column carried the heights northeast of Huang-hua-tin, his central column took possession of the heights south of Sha-ho-pu and captured Kan-chia-wo-tzu. His left column attacked the Russians at Lien-shan-pu and carried it. The Russians retreated to Ssu-fang-tai. The Russians attacked at Wau-chia-yuen-tzu but were driven back.

October 15. Oku's army occupied Sha-ho-pu and captured La-mu-tun. The Russians retired toward Ssu-fang-tai.

The Russians still held the heights of Wai-tou-shan south of the Sha-ho, from which they were driven on the 27th, and the little Lone Tree Hill on the banks of the Sha-ho three miles east of Sha-ho-pu was the scene of repeated assaults and noted for the display of heroism on both sides, but especially of the Russian Putiloff.

After the Russians had begun to fall back, great alarm was spread abroad over the fate of Stackelberg's army. It was said to have been cut off by Kuroki while the right wing of the Russian Army was turned by Oku. There appears to have been comparatively little ground for such fears. Its retreat was protected by a strong position on the hill at Wai-tou-shan, and the Russians held the line of the Sha-ho and much of the ground that they had regained during the winter season.

This battle is full of useful military lessons, which will be discussed hereafter.



BATTLE OF HEI-KOU-TAI, OR SANDIPU.
(Feb. 25–29, 1905.)

BATTLE OF HEI-KOU-TAI, OR SANDIPU.

[Russians, 80,000. Japanese, doubtful.]

After Port Arthur had fallen on the 1st of January, the Russians realized that they would soon have another army to encounter in addition to those of Oku, Nodzu and Kuroki, which they had fought at Liao-Yang and Sha-ho. It was important to know where Nogi was going, and on the 11th, Mistchenko, with the Russian cavalry, was sent on a raid to find him and to cut the railroad from Port Arthur. From the right flank of the Russian army he advanced as far as Niu-Chuang and found no evidence of a large Japanese army west of the railroad.

The only hope for a brilliant success for the Russians depended upon turning one wing of the Japanese army which still occupied a strong position along the Sha-ho extending west of the railroad beyond Hei-kou-tai.

The plains on the west offered a better prospect of success than the mountains on the east, and as Nogi was not to be feared in that direction Grippenberg, with an army of about 80,000 men and 350 guns, was ordered to turn the Japanese left flank.

The ground was frozen hard and covered with snow and ice, which made intrenching impracticable and gave additional strength to earthworks already constructed, so that they deflected projectiles much better than soft earth or sand. The correspondent of the Associated Press wrote:

"Although cold, the weather is ideal for winter campaigning. The ground is hard and the rivers are frozen solid, which makes easy the handling of artillery."

The advanced posts on the Japanese left were located at Hei-kou-tai and Chen-tan-pu (Sandipu), with strong reserves at Ta-tai and Lang-tung-kou. Chen-tan-pu was strongly fortified. The report says: "The Japanese had erected there a fort of a permanent type with triple earthworks and trenches extending in a southwesterly direction. Several villages to the northeast were also fortified strongly." The flat country in front formed a natural glacis and was completely swept by the fire from the forts.

On the 25th of January the Russians crossed the Hun-ho from Chang-tan to Chi-tai-tzu, surrounded and captured Hei-kou-tai and advanced toward Chen-tan-pu (Sanipu).

On the 26th the Russian force at Hei-kou-tai was strongly reinforced and Tou-pao was taken. The Japanese sent up their reserves from Ta-tai, which deployed on a line from Wu-chia-zu to Su-ma-pao and Lao-chiao. At the same time another Russian force, about a division strong, advancing from Chang-yan, invested Chen-tan-pu and sent a battalion or two against Lao-chiao. Japanese reinforcements came up to meet them. In the evening the Russians occupied a part of Chen-tan-pu, but coming upon a strong redoubt with a triple row of artificial obstructions which had been scarcely damaged by their fire, were forced to retreat. The Russian cavalry penetrated six miles south of Chen-tan-pu.

On the 27th the Russians near Lao-chiao fell back and the Japanese concentrated on Hei-kou-tai and Tau-pao, which were said to present the aspect of a fortress, being very strongly defended with field-pieces and machine guns.

Japanese reserves advanced from Lang-tung-kou to the center and to the left of the Japanese position, which was driven back to the line San-chien-pao, Hsu-chia-wo-pen, and Chen-shao. Su-ma-pu was surrounded and captured by the Russians in a midnight attack.

On the 28th the Japanese were reinforced and drove back the Russians in the center and on the left. The Russians fell back from Chen-tan-pu, but held Hei-kou-tai. After repeated attacks lasting three days and nights, the Japanese had been unable to drive the Russians from the left bank of the Hun-ho.

On the night of the 28th–29th they made several attempts to carry Hei-kou-tai and sustained severe losses due to the Russian artillery, and especially the machine guns. At 9.30 A.M., however, the place was taken, and on the arrival of more troops from the Japanese reserves the Russians withdrew from all the ground on the left bank of the Hun-ho south and southwest of Chang-tan.

During this battle the temperature fell to 20 degrees below zero, with a high wind which drifted the snow and rendered it hazardous to expose the troops to camping in the open plain, and also impeded the transportation of the guns and supplies and of the wounded. The report says that the soldiers' fingers, hands and feet, were benumbed, while stinging snow blinded them. The slightest wound caused excruciating pain, The wounded could not be left exposed, and if they did not receive attention within an hour they died.

After the battle it is reported that Grippenberg complained that he had not been supported by Kuropatkin, and another report says that he would have succeeded if he had not been ordered to retreat. If the weather had not changed this does not seem altogether improbable. The turning movement depended for its successon the concentration of superior force upon the Japanese left and rear, beyond the line of intrenchments where the attack and defense would meet on comparatively equal ground. A similar plan was carried out with better success by the Japanese at the battle of Mukden.

The long line of trenches from Chang-tan to the upper Sha-ho could have been held by a much thinner line of troops than that with which the Russians occupied it at the time, and a large fraction of this force could have been spared for the turning movement. It is not probable that Grippenberg thought that the left of the Japanese position extended as far to the west as it did. If more troops had been available it would have been better after reinforcing a few weak points in his line to extend it still farther to the west, in order to envelope the Japanese left rather than to attempt to carry such strong positions as that at Sandipu. Such maneuvers of course, depend also for their success upon the agility of the troops to enable them to avail themselves of the advantage of position which they gain by the initiative.

BATTLE OF MUKDEN.

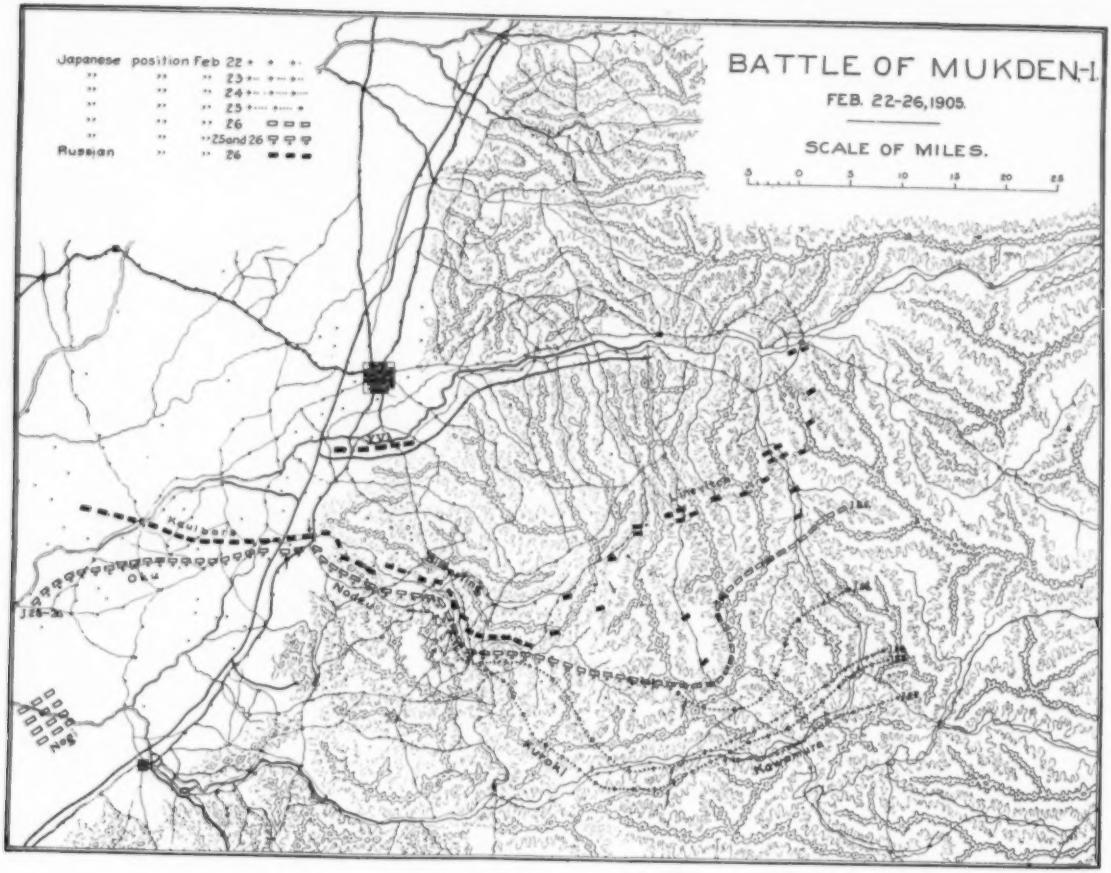
[Japanese 430,000. Russians 360,000]

Ever since the battle of the Shaho the hostile armies confronted each other over lines which gradually increased in length to about sixty miles with their centers along the Shaho about twenty miles south of Mukden. In places the two lines were not twenty yards apart.

Neither side carried its line of intrenchments more than about twenty miles west of the railway.

Liao-Yang and the Tai-tzu-ho formed the second line of the Japanese, and the Hun-ho from Mukden to Fu-shun, the second line of the Russians.

Fushun lies twenty-six miles east of Mukden. It was particularly valuable to the Russians on account of its coal mines, and for this reason and for strategic and tactical purposes Kuropatkin had connected it with Mukden by a railway.


BATTLE OF MUKDEN-I.
FEB. 22-26, 1905.
SCALE OF MILES.
5 0 5 10 15 20 25
Japanese position Feb 22
" " " 23
" " " 24
" " " 25
" " " 26
" " " 25 and 26
Russian " " 26
Kaulbars
Nodaju
Kuropatkin
Kuroki
Nogi
Oku

The Russians divided their forces into three armies in this battle, the first under Linevitch, the second under Kaulbars and the third under Bilderling. Linevitch had three army corps, the Second, Third and Fourth with Rennenkampf's independent corps of Cossacks. Kaulbars had four army corps—the First (Siberian), Fifth, Eight, and Tenth, with a division of Rifles. Bilderling had the First, Sixth and Seventeenth Corps. The Sixteenth Army Corps formed the general reserve. Mistchenko had an independent cavalry division.

There were in all 376 battalions of infantry, 171 batteries of artillery, and 178 sotnias of cavalry—making numerically about 300,000 rifles, 34,000 gunners with 1,368 pieces and 26,700 sabres or a grand aggregate of 361,500 of all arms.

The Japanese had three armies opposed to the Russians.

Kuroki had three divisions, Nodzu two and Oku four. During the battle Kawamura came up on the right with three divisions and Nogi on the left with four. The full strength of a division would be about 30,000, making a total of 480,000, but it is safe to deduct at least ten per cent. and take 432,000 as the maximum estimate for the Japanese Army. The Japanese artillery may be estimated at 1600 pieces. The Japanese journals place the numbers on both sides at Liao-Yang at 460,000, at the Sha-ho at 580,000 and at Mukden at 850,000, but these numbers are probably too small.

Oyama's or, perhaps, Kodama's plan was to bring up the army of the Yalu under Kawamura to the mountainous region, on the right of the Japanese line, and by a vigorous attack draw the Russian reserves in this direction, and to bring up Nogi with the army of Port Arthur on the left of the line, under cover of a vigorous attack by Oku, so as to turn the Russian right.

It appears to have been well known that Kuropatkin would expect an attack in the mountain region on his left, because the Japanese had been accustomed to this kind of warfare and were not considered a match for the Russians in level ground like that on the Russian right. This opinion was confirmed by the fact that after the battle of Hei-kou-tai the Japanese did not follow up their victory.

Many considerations led the Japanese to fix upon the end of winter as the time for the great battle. Up to the first of January all the supplies and reserves were required for the army of Port Arthur. It was desirable to cross the Hun while it was still frozen, and the difficulty of digging trenches in

frozen ground put the attack on a level with the defense as soon as the field of battle extended beyond the original entrenchments. On the other hand it was not desirable to bring the army of the Yalu into the field in the early winter, for it could be better organized, subsisted and drilled nearer home. The army of Port Arthur made good use of the months of January and February to prepare for its new rôle and to come up into the line.

Kawamura's army disappeared from Japan at some time near the close of January, and up to the time of the battle of Mukden the Japanese public did not know where it landed, what route it took, or the force it mustered.

Kuropatkin knew that it was somewhere east of Mukden, and this helped to confirm his forecast that the Japanese flanking movement would be made through the mountains. Therefore he massed a force of 60,000 men in strongly intrenched positions on the south and southeast of Fushan.

Nogi's army also passed out of sight immediately after the fall of Port Arthur. Kuropatkin probably hoped to get into touch with it when he sent Mistchenko's cavalry raid against Niu-chwang and Hai-cheng in the early part of January, as well as from the results of the turning movement at Heikou-tai later in the month.

From the failure to find any trace of this army in the west, Kuropatkin appears to have inferred that it was also to take part in the flanking movement in the east.

Thus everything turned out as the Japanese had wished, to enable them to turn the right of the Russian army in the open plain west of the railroad by bringing up Nogi's army from Port Arthur on the left of the position where the hostile armies had confronted each other since the Battle of the Sha-ho.

It cannot be regarded as a serious mistake for Kuropatkin to think that his enemy would come up on one side or on the other.

The dispositions that he made to meet the attack are what interest the military student.

The best proof that the main attack was not coming from the west would have been the possession of the dangerous ground by his own advanced parties, and for the failure to secure it and communicate to him what was actually going on in

different parts of the field either he or some of his subordinates are responsible.

Before the battle the Russian line of defense had been extended to the east in the direction of Ma-chun-tun and Ti-ta, although the advanced posts held the line of the Tai-tzu-ho, twenty miles to the south. On the west the hostile forces were in contact for some distance beyond the railroads, and the extreme Russian left occupied the line from Chang-tan to Ssu-fang-tai. Rennenkampf's detachment was on the left. Linevitch held the line of Ti-ta and Ma-chun-tun. Bilderling the center as far as the main road, and Kaulbars the left. The Sixteenth Corps was in reserve at Hun-ho-pu.

The Japanese armies of Oku, Nodzu and Kuroki confronted the Russian right and center on the same ground that they occupied after the battle of the Sha-ho, excepting that Kuroki had slightly extended his right flank. The Japanese left was purposely not extended, but Nogi's army was assembled in Oku's rear, directly west of Liao-Yang, screened by all the cavalry of the Japanese army.

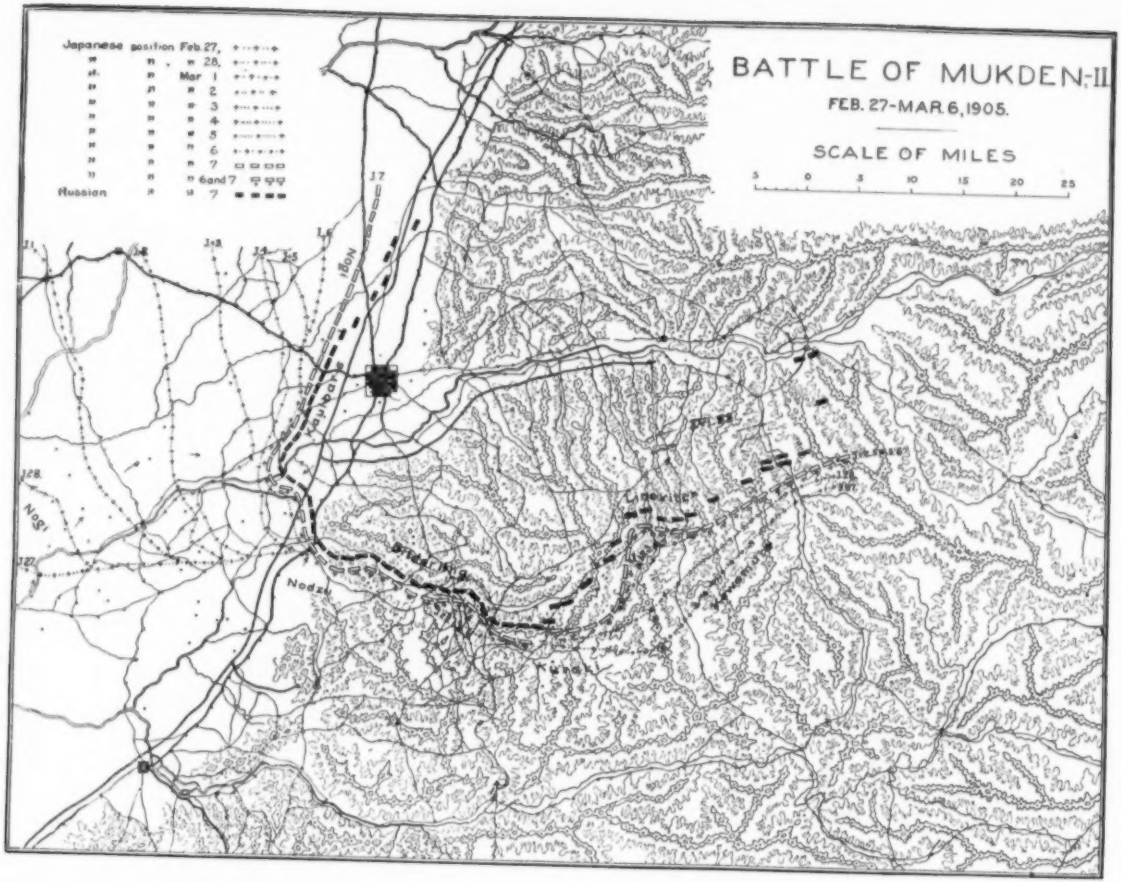
On the 19th of February the army of the Yalu, under Kawamura, began to appear and drove in the Russian outposts at Chien-ho-ling on the 20th, near Wan-liu-ho on the 21st, and at Nan-tai-tzu on the 22nd. Between the 19th and 22nd the Japanese had occupied Wei-tzu-ku, Chin-tu-ku and the left bank of the upper Tai-tzu-ho. On the 23rd they attacked Ching-ho-cheng in a heavy snow storm. The ice in the Tai-tzu-ho was breaking up.

On the 24th Ching-ho-cheng was taken. Meanwhile the Russian artillery was firing on the advanced positions of the Japanese all along the line. The Japanese left wing held its position, but on the right wing Kawamura advanced in two columns, one directed on Ti-ta and one on Ma-chun-tun.

On the 26th the first had reached Wu-lung-kou and the second San-lung-ku. In the center the Russians abandoned a few outlying posts.

To protect his left flank Kuropatkin sent a large force from his reserves, probably the Sixteenth Corps, by rail to Fu-shun and thence by road to Ma-chun-tun and Ti-ta.

From the 26th of February to the 7th of March the right wing of the Japanese Army made but little progress. The right column under Kawamura reached the immediate neighborhood of Ti-ta on the 27th of February and Ma-chun-tun


BATTLE OF MUKDEN-II
FEB. 27-MAR. 6, 1905.
SCALE OF MILES
5 0 5 10 15 20 25
Japanese position Feb. 27,
" " " 28,
" " Mar 1
" " " 2
" " " 3
" " " 4
" " " 5
" " " 6
" " " 7
" " " 6 and 7
Russian " " 7
Mukden
Nodzi
Kunsi
Linkwisen
Sandepu
Tiehling

on the 1st of March, but the Russian positions there were impregnable.

The Right Central Army, under Kuroki, was also divided into two columns. The right column co-operated with Kawamura in the attack of Ma-chun-tun and the left tried to carry the Russian position on the Pen-shi-ho road.

On the 6th Kawamura's left column occupied the heights north of Hwang-ti and Kuroki's right column those south of Pai-tzu-kou.

The Russians made frequent counter attacks.

By the 3rd Kuroki had carried the advance positions of the Russians on the Sha-ho, and on the 4th the Russians made a counter attack on Pien-niu-lu, but without success. On the 5th Kuroki carried a position on the heights of Tung-kou, east of the Sha-ho.

Between the 2nd and 6th, the Central Army, under Nodzu, with two of Oku's divisions gradually forced the Russians back from Yao-chien-hou-tun, Tang-chia-tun and positions south of the Sha-ho. Liu-chuang-tun and Wanpao-shan were carried on the 5th.

These were advanced posts, and on the 7th of March the Russian left and center still held its fortified position, extending from Ti-ta on the east through Ma-chun-tun to the range of hills on the right bank of the Sha-ho from its sources to the main road from Liao-Yang to Mukden, and there is no reason to suppose that they could ever have been driven from this position by a frontal attack even if it had been defended by a much weaker force than that which had held it through the Winter.

In the meantime, in the district west of the railroad, up to the 27th of February, the Russians kept up a heavy artillery fire where the battle of Hei-kou-tai had been fought a month before, but Oku with the Left Central Army crossing on the ice advanced on both banks of the Hun-ho against the fierce opposition of the Russians.

On the 1st of March he turned their strong position on the right bank of the Hun-ho, extending from Ssu-fang-tai to Chang-tan. On the 2nd he reached Wu-kia-tai and Chang-tan, and on the 3rd Wo-kia-pu and Meng-ta-pu, On the 4th Su-hu-pu, Lai-shen-pu and Su-chia-pu, and on the 5th Hsio-su-chia-pu and Han-sheng-pao. These positions were strongly contested and counter attacks in the night were frequent. Ehr-

tui-tzu was carried on the 6th. In this way Oku had turned the Russian right and on the 7th had arrived within twelve miles of Mukden.

The ground was frozen hard and trenches could not be improvised, the fight was kept up in all the villages with which the plain was covered. The houses were set in stone, or mud-walled compounds which were excellent protection from rifle fire. The Russians sometimes entered at one end of a village and the Japanese at the other, creeping forward and breaking through the walls of the houses in order to avoid exposure.

Such fights for localities where the bayonet was freely used have given rise to many exaggerated expressions of opinion about its advantages as a weapon to be used in assaulting strong positions.

Under cover of Oku's advance, Nogi with the Army of Port Arthur, left Sha-hei-bo, a little town west of Liao-tang, advancing at the rate of twenty-five miles a day and suddenly appeared on the left flank of Oku's army and completed the turning movement. Its presence was screened by the cavalry.

On the 1st of March Nogi's cavalry entered Ta-min-tun and a detachment reached as far as Hsim-min-ting. They encountered no serious resistance and the Russians apparently took them for Oku's troops.

On the 3rd Nogi had reached Ta-tzu-pu and La-mu-ho about twelve miles west of Mukden, and on the 4th his army had swung around so that his right came into line with Oku's left at Lik-wan-pau, and his left extended due north to Ta-shih-chiao, fifteen miles west of Mukden on the Hsin-min-ting road. During the next two days Nogi assisted Oku's attack against the Russian positions on the southwest of Mukden while pushing his own left still farther north, and on the 7th, keeping his right still pivoted on Lik-wan-pau, swung eastward, with a frontal development of fifteen miles.

This situation somewhat resembled that of the battle of the Sha-ho when Oku had turned Kuropatkin's right and Kuropatkin withdrew his troops from the center to meet him.

Nogi appears to have met at first with but little opposition. About one regiment on the 1st and a few small detachments on the 2nd. Mistchenko's cavalry had been allured to the north by a few Japanese squadrons which had cut the railroad north of Tie-ling.

When Kuropatkin heard of the movement on his right he sent two divisions of the Sixteenth Corps to oppose it. On the morning of the 3rd they encountered Nogi in force and were defeated. As the ground was frozen they could not entrench. On the 6th another Russian division attacked at Ta-shi-chio with the same results.

On the 7th the Russian reinforcements appeared at Tang-shih-tun and one division at Li-kwan-pu.

The Russian had constructed tier upon tier of entrenchments to the south and west of Mukden and Oku's progress was checked.

On the 7th Kuropatkin gave the order to withdraw to the line of the Hun-ho. On the morning of the 7th the commander of Kuroki's right division sent word that the enemy was moving a little. The Japanese entered the Russian works and found them empty. Kuroki then asked Nodzu if there were any signs of weakening in his front. Nodzu investigated and his soldiers were soon in the trenches which they had faced all Winter. During the night of the 7th Linevitch, and those forces of Kaulbars' that were east of Mukden, withdrew so rapidly that the Japanese did not catch up with their rear-guard until it was eight miles beyond the Sha-ho on the morning of the 8th.

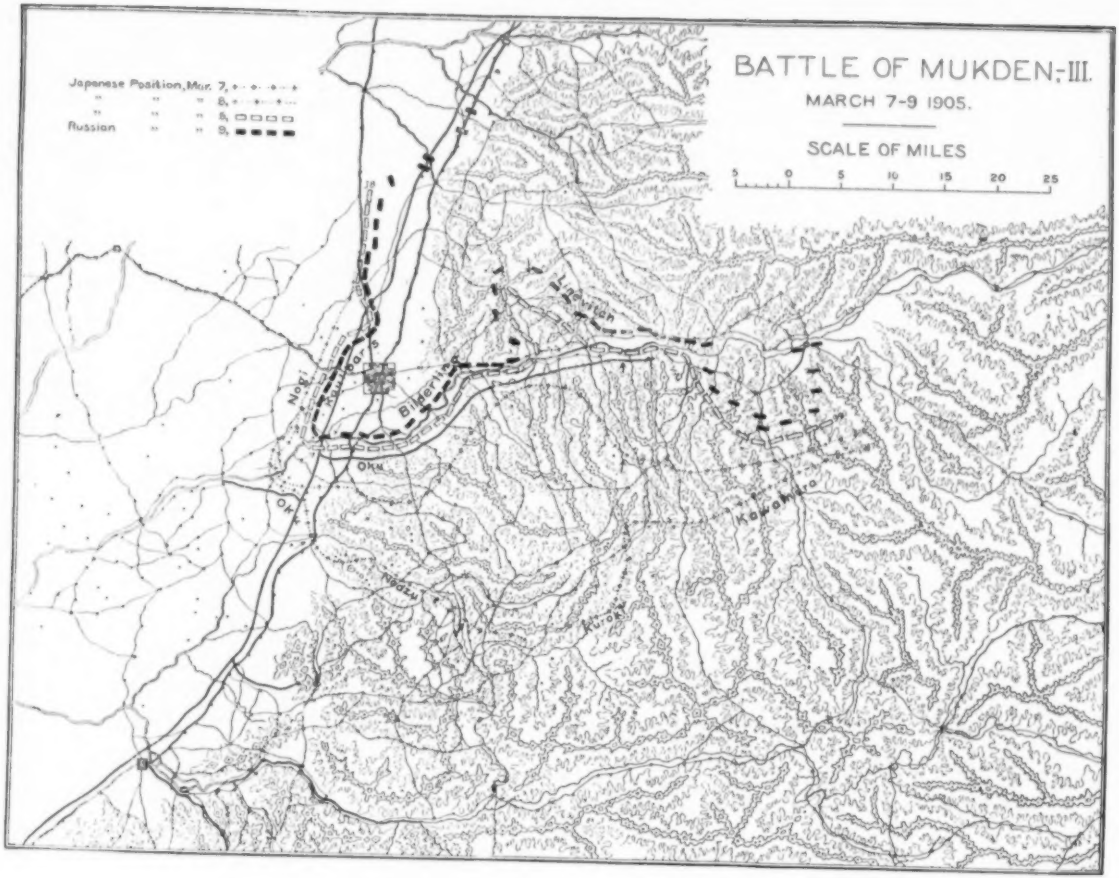
Kuroki had begun the pursuit before midnight and Nodzu before 2 A. M. At 11 o'clock in the forenoon of the 8th Oku, after a desperate fight at Li-kwan-pu, drove back two Russian divisions with great loss, and broke through the defense which encircled Mukden on the south and west, and from an attitude of defense passed to that of vigorous pursuit.

At 8 A. M. on the 8th, the Russians evacuated Ma-chun-tun, and the Japanese pursued, reaching in the evening a line about six miles to the north.

On the 8th Nogi took possession of Hsiao-chi-tun, Pa-chia-tzu, and San-tai-tzu and destroyed the line of railway there. The Russians held a strong line of defense passing through Ta-ping-chuang and Pei-ling.

At noon the Russians began to retreat along the east side of the railway line north of Mukden, while a portion of the same force occupied a position on the west side of the railway to cover the retreat.

In falling back to the line of the Hun insufficient care was taken to preserve the touch, and the armies of Linevitch and


BATTLE OF MUKDEN-III.
MARCH 7-9 1905.
SCALE OF MILES
5 0 5 10 15 20 25
Japanese Position, Mar. 7,
" " " 8,
" " " 9,
Russian " " 9,
LIAOYUAN
BIENTIEN
NOKI
OHM
KUROKI
KOMOKITO

Bilderling left a wide gap between them which the Japanese were not slow to discover. The arrival of Bilderling's forces at Mukden led to a fearful accumulation of troops on a restricted space, where they gradually became exposed to the converging fire of the enemy, but Kuropatkin made a gallant effort to break the line, and is reported to have led in person an attack of sixty-five battalions following an earlier one by forty battalions.

On the 9th the Russians evacuated Ti-ta by night and at 3 A. M. the Japanese entered, but this column appears to have made but little progress on that day. The left column of Kawamura's army pursued the Russians to the banks of the Hun.

Kuroki reached the left bank at dawn, drove off the Russians from the right bank, crossed the river on the ice, and finding the weak point in the Russian line, between Bilderling and Linevitch, pushed on to northwest, a portion of his troops reaching the neighborhood of Hu-shin-pu and Peng-chia-tou.

Nodzu drove back the Russians from Hun-ho-pu, and from some positions on the right bank of the Hun-ho, but was unable to force a passage.

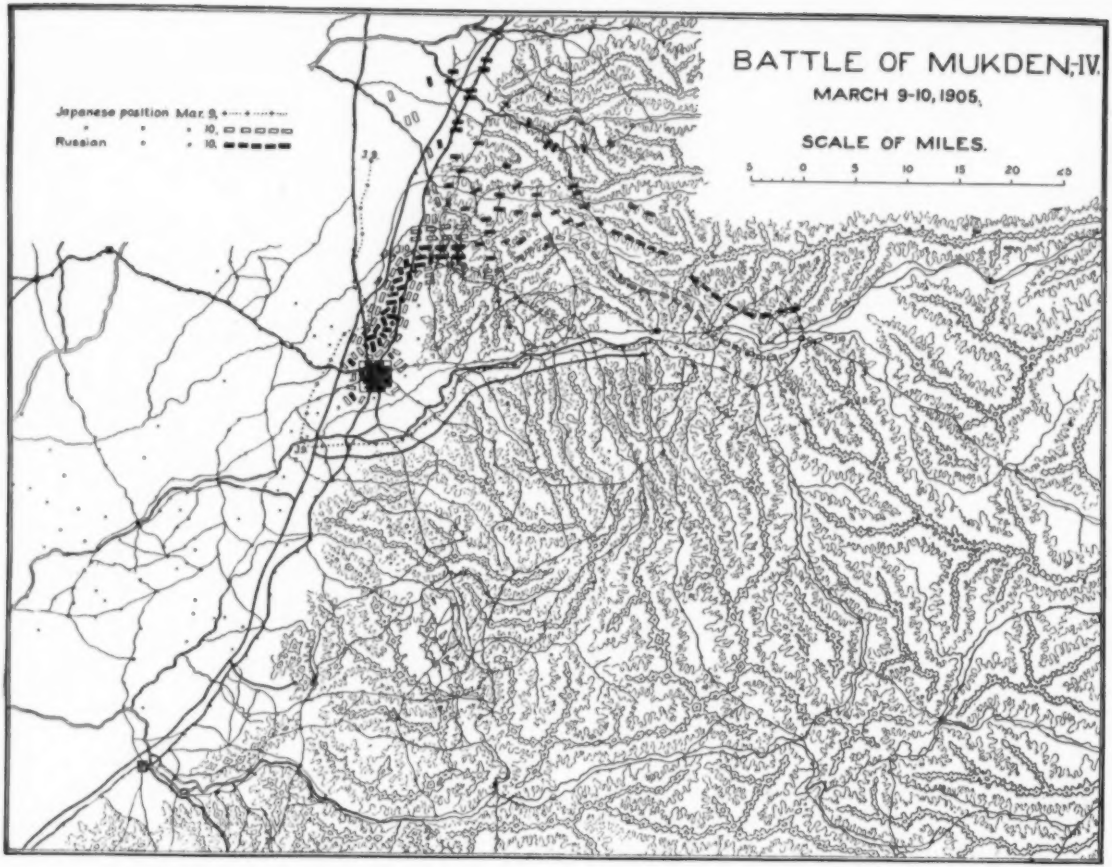
Oku was unable to drive the Russians from the railroad bridge across the Hun. Nogi was unable to carry the strongly-entrenched position on his front, but extended his fighting line to the left to prevent the escape of the Russians. His left column was driven back a little by their counter attacks.

For fear that Bilderling and Kaulbars would be completely surrounded and captured, Kuropatkin ordered a general retreat at dusk on the 9th.

On the 10th, Kawamura's left column pursued the Russians who occupied the defensive works which they had prepared to the north of Fu-shun.

The ice in the middle of the Hun-ho there had melted, so that the river could only be crossed by bridges. The left column crossed and carried the heights. The right column reached the left bank in the evening.

On the 10th, Kuroki's right column, which had been sent to assist Kawamura in the attack on Fu-shan, crossed the Hun-ho and carried the heights north and northwest of Fu-shun and occupied a line passing from La-ni-wa to La-ma-kou. Kuroki's central column drove the Russians from Hsing-lung-


BATTLE OF MUKDEN; IV.
MARCH 9-10, 1905.
SCALE OF MILES.
5 0 5 10 15 20 25
Japanese position Mar. 9,
" " " 10,
Russian " " 10.

tien, and occupied Hu-shan-pu. His left column drove them from a redoubt on the heights northwest of Chin-tien and occupied the heights north and west of Ping-chia-tou. Its artillery poured a heavy fire upon the Russians retreating along the Tie-ling road and the railway and inflicted heavy losses on them.

The right column of Nodzu's army drove the Russians from Chi-hsien-fang and occupied the line from the east of Wang-chia-kou to Chao-chia-kou, and from the range of heights south of Wang-chia-kou attacked the Russians retreating along the Mukden road. A detachment of this column which crossed the Hun at a point northeast of Yang-kuan-tun fought its way to a line extending from the northwest of Yu-lin-pu, to Ehr-tai-tzu to intercept the retreat. Nodzu's left column crossed at a point a little to the west of Yang-kwan-tun and continued the pursuit.

Oku's army captured Ta-pu and Hsin-pu, and a general pursuit was then commenced by the whole line extending from Ma-tou, two and a half miles south west of Mukden to Si-ta Ta-ping and Hou-ta.

Nogi's army successfully resisted repeated counter attacks of the Russians, and subsequently was greatly extended so as to attack from north to south, occupying the line of the Pu-ho directly across the main line of retreat and astride of all the roads leading from Mukden to the North. The detachment which advanced towards Hu-ti-tai to intercept the retreat was attacked by about one division of the Russians, who tried to enclose the fighting line of the detachment and overwhelm it, but without success.

Portions of Nodzu's and Oku's armies occupied Mukden at 10 A. M.

The Japanese troops who had crossed the Hun-ho pursuing the enemy occupied on the afternoon of the 11th of March a line about twelve and a half miles north of the river.

On the 11th the pursuit continued, a Japanese detachment which marched north from the vicinity of Pu-ho encountered a large column of Russians retreating north and enveloped them, compelling them to surrender after a hand to hand fight. The total number of prisoners taken by the Japanese in this battle was estimated at 35,000.

On the 12th the column of retreating troops had reached a line twenty-five miles north of Mukden.

This battle, the greatest of modern times in the numbers engaged, is so full of military lessons that it is out of the question here to speak of anything but its general features. The final collapse of the Russians appears, from the meagre accounts that are now accessible to the public, to have been due mainly to the lack of co-ordination of the several armies in withdrawing from the Sha-ho to the Hun-ho. If Bilderling and Linevitch had kept in touch, and the line of the Hun-ho had been properly fortified it could have been held by comparatively few men against all comers. Kuropatkin would then have had sufficient numbers at his disposal to outflank Nogi or cut him off and destroy him. There is no apparent reason why he should not have done so without falling back from the Shaho.

The cause of the Russian collapse must be laid to other causes than the grand tactical situation, and these causes which are most interesting will be discussed hereafter, but it may be said in passing that the reports that extensive intrenchments were carried by frontal attacks do not appear to be substantiated. The advance of the right wing of the Japanese Army from February 20th to March 7th was made against outlying posts. Ti-ta and Ma-chun-tun were never carried until the Russians left them. On the left flank Oku appears to have turned the Russian right at Ssu-fang-tai, before he carried the villages between the Hun-ho and the Sha-ho, and in falling back the Russians may have been influenced by the consideration that Nogi was already on the prolongation of Oku's left wing.

[TO BE CONTINUED.]

THE QUARTERMASTER'S DEPARTMENT AND THE ORGANIZED MILITIA*

By Lieut. Colonel W. H. MILLER, United States Army
Deputy Quartermaster-General.

MR. CHAIRMAN—AND GENTLEMEN OF THE NATIONAL GUARD ASSOCIATION:

There has devolved upon me by orders of the War Department, the duty of preparing and reading, in your presence, a professional paper which naturally concerns the branch of the service to which I belong—the Quartermaster's Department.

The duties of the Quartermaster's Department were epitomized by the Quartermaster-General, United States Army, in his last annual report, as follows:

> "Briefly, they begin with supplying the recruit with his first army clothing and extend to providing and caring for the soldier's last resting place, and between these two extremes there is included all that is necessary to properly clothe, equip, shelter and transport, by land and water, the entire army, its supplies of every kind—all of its constituent parts."

To the layman, this may not mean much; to the military profession, in general, the magnitude and variations of the duties are not clearly comprehended, but it is realized by every one that to supply nearly every want of the service, application must be made to the Quartermaster.

The duties of the Department being so vast and so varied, it is not practicable, in a paper of ordinary length, to fully describe them. Consequently this paper will be confined to what may be interesting to the National Guard when participating in joint maneuvers with troops of the army.

In undertaking this matter, I have determined to make my effort more a plain talk to you individually and collectively, than an essay on the subject in a more formal style. I think that the best theme for me to discuss is that which is peculiarly

*Paper prepared by Lieut. Colonel W. H Miller, Deputy Quartermaster-General, U. S. Army, to be read before the National Guard Association at its meeting at Saint Paul, Minnesota, June 19th-21st, 1905.

interesting to the regiments, and incidentally to the battalions and squadrons of the National Guard; the Regimental Quartermaster and his assistants, the battalion or squadron quartermasters.

In consideration of the subject, on which I aim to make only general observations, I am somewhat handicapped by the reflection that it is a theme which admits of little that is new or of recent discovery. The National Guard of the present day is working on practical lines of military instruction under conditions assimilated as nearly as possible to those attending actual regular service. The Spanish War, the insurrection in the Philippines, and the Chinese relief expedition, besides adding interesting pages to modern history, have immeasurably increased the military importance of the organized militia of the United States, and their lessons will work for good should necessity again require the employment of armies in the field. There has been a great and useful increase in the general and special knowledge of those phases of the service which involve the application of the principles of transportation, supply and shelter, under the varying conditions to which the soldier is subjected, individually and *en masse*. The application of business principles to the necessary operations of the supply departments of the Regular Army and the Militia has been markedly apparent. The improvement of the methods which lead to promptness and general efficiency is very distinct. The simplification of procedure in delivering at the firing line all that the soldier requires to make him effective in the supreme hour of action is an accomplished fact. With the association of the regular troops and the militia in the camps of instruction and maneuver, initiated and conducted under the auspices of the general Government, and in the annual encampments of the State troops, the mutual interchange of ideas, and actual observation and practice, cannot fail to be helpful to both.

In the camp of instruction, when the regiment forms a part of a brigade, many of the details which would require the regimental quartermaster's attention under independent conditions will be arranged and controlled by the brigade quartermaster. The location of the camp will have been selected some time before its actual occupation by troops. The clearing of the grounds, cutting away and removal of underbrush, grasses and weeds, providing water supply, digging

trenches for latrines, contracting for and receiving fuel and forage, employing teams and wagons for camp purposes, and obtaining requisite supplies in general, the procurement of which comes within the province of the quartermaster, should be attended by a staff officer sent in advance to the camp to provide for everything in advance of the arrival of the commaand.

Assuming that the regiment is fully clothed and equipped with necessary tentage and other property required for use during the period of the encampment, the regimental quartermaster's first step, after he has received the order directing his regiment to participate in the joint maneuvers, will be to call upon each battalion quartermaster for a report, in duplicate, of the exact number of officers, enlisted men and animals, and weight of impedimenta for which transportation will be needed.

This report should show the station and strength of each company, the name and address of any officer, staff or line, to go with the battalion, but whose residence is at some other point than the location of one of the companies thereof; and also the names and rank of mounted officers and the number of horses that each officer will take with him, and the place from which the horses are to be forwarded.

One copy of this report should immediately be forwarded to the Chief Quartermaster of the Department (United States Army), who has been assigned to the duty of furnishing transportation for the troops to participate in the maneuvers, the second copy to be retained in the files of the regimental quartermaster's office.

This report is absolutely necessary so that transportation requests and bills of lading can be furnished the proper officers and necessary cars to move the commands obtained.

It should be understood that when troops move at the expense of the United States there is no law or regulation fixing the rates for the service, and in the absence of special rates, to be obtained in advance, customary tariff rates charged the general public, less land-grant deductions obtain. Hence, to secure favorable rates competition must be invited. This necessitates a knowledge of the numbers and places for whom and from where transportation will be needed, which information can best be furnished by the report indicated, and its early and accurate rendition is obvious, not only to economize

in cost but to conserve the comfort of the troops by obtaining proper facilities for their transportation.

It should be understood that disbursements of every character made by an officer of the United States are closely scrutinized by the auditors of the Treasury Department, and that to pass such scrutiny all vouchers and sub-vouchers thereto must be of due form and free from unexplained or uncertified alterations; hence, officers of the National Guard charged with filling in bills of lading and transportation requests should be very careful to state actual facts and dates thereon, and, if for any reason an alteration therein is made, to fully explain the cause thereof over their official signatures, either on the reverse side of the transportation request or on the face of the bill of lading. This, and due care to avoid errors, will obviate much correspondence and trouble to the officers concerned.

While the railway equipment in the United States is vast, the commercial demands often overtax its capacity, and much equipment may be needed to move troops at a time when it is fully employed in other traffic, so that it is best to limit the demands of actual necessities of the commands that proper accommodations for all may be had.

To comfortably move a battalion of infantry, for a journey, say, twenty-four hours, without being accompanied by its tents, ordinary camp equipage and mounts, requires one standard and six tourist cars, and one baggage.

For the transportation of squadron (four troops) of cavalry in addition to the cars for a battalion of infantry, sixteen horse cars and an additional baggage car for saddles are needed; and for the transportation of a light battery of artillery with 112 horses, four guns and eight caissons, three tourist, six horse, two baggage and five flat cars would be required.

Now if we come to move a regiment of infantry, a regiment of cavalry and one battery of field artillery, we find that there would be needed:

Six standard sleeping cars; thirty-nine tourist cars; eleven baggage cars; fifty-five horses (allowing one of these cars for the infantry regiment); five flat cars.

To preserve organizations, there would be:

One train of twelve cars; one train of thirteen cars; five trains of fifteen cars each; one train of sixteen cars.

In the Department of Dakota, the headquarters of which

is in St. Paul, Minn., the troops of the National Guard number a total of 3,302 organized.

In Minnesota.—Twenty-seven companies of infantry; two battalions of artillery; one company of engineers. Total strength, 2,042.

In Montana.—Seven companies of infantry; one battery of artillery. Total strength, 577.

In North Dakota.—One regiment of infantry; one battery of artillery. Total strength, 685,

To transport the officers and enlisted men of these commands, exclusive of their horses and impedimenta of any character, at least seventy passenger cars would be needed.

In the Department of the Lakes, headquarters in Chicago, the National Guard musters 24,715 officers and enlisted men, organized:

In Illinois.—Eight regiments of infantry; one regiment (eight troops) of cavalry; three batteries of artillery; one company of engineers; hospital and signal corps detachments. Total strength, 7,616.

In Indiana.—Three regiments and one unassigned company of infantry; three batteries of artillery; hospital and signal corps detachments. Total strength, 2,918.

In Kentucky.—Two regiments of infantry; engineer and signal corps detachments. Total strength, 1,620.

In Ohio.—Nine regiments of infantry; two troops of cavalry; four batteries of artillery; one battalion of engineers; two companies signal corps; and in Medical Department: two ambulance companies; three companies and two detachments of instruction. Total strength, 6,844.

In Michigan.—Three regiments and one battalion of infantry. Total strength, 2,791.

In Wisconsin.—Three regiments and one battalion of infantry; one troop of cavalry; one battery of artillery. Total strength, 2,926.

To transport the officers and enlisted men, exclusive of animals and equipage of any character would require about 530 passenger cars; hence, it will be apparent that to move troops by rail much equipment is needed, and to secure it great care should be exercised to limit each command to its actual necessities.

It is obvious that maneuvers cannot always take place at points where there are adequate terminal rail facilities—that

is to say, numerous side tracks and platforms. Therefore, and for practical field experience, it is best that impedimenta of every character, not absolutely to be used en route, should be forwarded, by freight, in advance of the troops. To this end, a detail, to consist of a commissioned officer, and say, ten enlisted men from each battalion, should be made, to conduct all the impedimenta and equipage to the designated camp as far in advance as practicable of the time the troops are to arrive there. This detail should be charged not only with conducting the impedimenta to camp, but to prepare it (this camp), as far as possible, for occupancy by the troops, and also, under the direction of the chief quartermaster of the maneuver division, to whom it should report in the first instance, to be on hand upon the arrival of the troops with necessary wagons to conduct each battalion to the camp previously prepared for it. This, or a similar detail, should be charged with packing and forwarding the impedimenta and equipage after the troops depart from camp to their home stations.

The value of these details will be found in the ease with which the commands can be entrained and detrained free from incumbrance. And, although this may not be a matter of quartermaster's administration, it would be a good thing if the officer in charge of this detail could be advised in ample time of the probable hour of arrival of the regiment at the camp. It often happens that troops arrive late at night, without anyone to meet them and conduct them to the camp, thus compelling an uncomfortable bivouac. This may be taken as one of the conditions which soldiers must learn to accept as part of the day's work, but I have never been able to assimilate the theory that hardship and exposure should form a portion of the preliminary training of the enlisted man. The miseries of campaigning may toughen the soldier, but they will often result in breakdown. To inure men to discomfort by compelling them to undergo hardship, when it is not absolutely necessary, is unwise. They should be protected from unnecessary privation, and put to the test of strength and endurance only when the supreme moment therefor has arrived. There is no use in breaking a man down in trying to find out whether he is capable of undergoing an extraordinary strain.

In the journey to the camp all officers residing apart from the station of a command should join their respective com-

mands at some station thereof, and all separate companies should join the battalions to which they belong at the nearest junction point en route, so that the troops shall arrive at camp in regular battalion organization.

Water barrels, to be furnished by the respective commands, should be securely placed on the platforms of the passenger cars, and guards stationed to see that the barrels are kept filled and covered and that the supply is not wasted.

Space for making coffee should be reserved in the front end of the baggage car, in which a field range should be set for the purpose.

The men should be instructed to depend upon the haversack en route, and bulky mess chests for other than camp use be avoided.

Before the train starts, after every stop en route, the rolls should be called, and if any absentees are found, the fact should be reported to the station agent, and he be requested to forward them on the first train following that of the command. Proper discipline will suggest that an absentee en-route should be severely dealt with.

Maneuver camps cannot, as a rule, be located at points where side-tracks and platforms are plentiful, and to move twenty-five trains, in and out, on a single track railway, in addition to its customary traffic, will consume nearly a whole day. This time will be greatly reduced if the troops are free of impedimenta, as platforms will not be necessary to entrain the infantry, which arm should be entrained first and be moved out of the way of the cavalry and artillery; as for entraining the two latter, platforms are of great convenience, but not of absolute necessity, as at least eight days' forage can be carried in the horse cars, and in cases of emergency the baled hay can be used in loading and unloading (particularly the latter) the horses of the cavalry and artillery from the cars with the aid of the movable partitions therein, but as the maneuver camp, while actually in the field, is of the character of a depot, or base, of what Chickamauga, Anniston and Tampa were in the war with Spain, ample facilities should be provided thereat for detraining and entraining the troops, and for means of transportation for all camp purposes.

When travel during the night, or for a long journey is necessary, standard sleeping cars should be furnished, one

berth for each officer, and tourist sleeping cars for the enlisted men, three men to be assigned to each section thereof.

Palace horse-cars, by reason of their facilities for feeding and watering the animals en route, and also for the quantity of forage that can be carried therein, should be preferred for the transportation of horses and at least two men, accustomed to horses, should be detailed to each car to care for the animals en route.

A baggage car should be ample for each battalion of infantry while en route; the baggage of each company being stored therein separately so that it can be readily reached if it is necessary for one or more of the companies to detour en route.

For guns and caissons gondola cars should be avoided and flat cars, only, be used. They are readily loaded and unloaded while the sides of many gondola cars are fastened to the platform of the car and cannot be detached.

To prescribe rules to meet all conditions is impossible, and the best judgment of all officers, particularly the quartermasters, must be exercised to utilize such means as may be provided for the troops and to secure therefrom the greatest convenience and comfort of the commands.

Arrived at destination the quartermaster will be immediately concerned with getting his regimental belongings to the camp. The chief quartermaster of the division or brigade will, if proper notice has been given him, have such transportation as is necessary at the point of unloading from the train. Conditions, varying with the locality in which the encampment is held, may necessitate the use of hired transportation, including teams, wagons and drivers. The transportation will usually be directly controlled by the chief quartermaster of the division or brigade, but it may be assigned to the different regiments pro rata, especially if marches are on the programme in which the operation of the regimental train may play a part. Having unloaded passenger and baggage cars, and turned his back upon the iron horse, the quartermaster will find himself busily engaged in making order out of chaos, in completing the numerous details of business which he has anticipated and arranged for in advance, and in meeting and disposing of those which demand attention without previous acquaintance or introduction, the insistent and ever recurring emergencies. In the care of transportation,

in the receipt and issue to the animals of the daily forage allowance, in the attention to such requisitions for supplies as are needed by the troops in their temporary status, he will be profitably and busily engaged for the greater part of his time. He will have to depend upon subordinates, of course. It will be impossible for him to do it all, but not impossible to exercise a vigilant and systematic supervision which is worth much as an incentive to faithfulness and diligence on the part of his subordinates, and assistants, enlisted men and civilians.

You have all read about, heard of, or know of the trite phrase that "Poets are born, not made." I make this reference simply to emphasize what I have to say. Quartermasters are different—they have to be *builded*. I do not mean *built*, but b-u-i-l-d-e-d; that is, you must first find the proper material, and with that in hand proceed to produce a finished product in the shape of an all around man that can meet any emergency that may arise. There are not many of them, and they come high.

Assuming that all of you understand how important is the matter of transport and supply, I venture to indicate that the best material for the development of a battalion or regimental quartermaster, is what can be called a "line soldier," a man who has known the feel of the campaign hat; the crunch of the marching shoe, or that tired knee feeling that all cavalrymen are reluctant to admit. In other words, a quartermaster to be a good one, must have been in touch with the soldier, and must know his needs and his wants, afoot and horseback. Given the above described material, there is needed the absolutely essential spirit of "get there," sometimes, and appropriately called the "Yale spirit," a spirit that does things; a spirit that accomplishes results. With this start, there is nothing more needed than experience and an opportunity to do. All of the ways and means of the quartermaster's life come to the right man if you have selected that kind; if you haven't, it would be best to make another try.

It goes without saying that the duty of a regimental or battalion quartermaster is not a sinecure. He is there for business, not for pleasure or show. He must know his business. He must never be dependent on the quartermaster sergeant for the ready answer that his commanding officer has a right to expect to his inquiries at any and all times. He

must know all about clothing, clothing allowances, extra clothing, ornaments, chevrons of all kinds, tents, camp equipage, kitchen appliances in the field and in garrison; how to direct and assist in the supply of cooking fuel in the field, when there is apparently none in sight; how to "rustle" for his command, whether battalion or regiment, and get things.

In the field, en route from the home station to the maneuver camps and return, either by railroad or by marching, and while in the maneuver camps, it is necessary that the quartermaster, be he division, brigade, regimental, battalion or squadron quartermaster, should know all about his organization and its needs. He may lose more or less sleep over it, but that is what he is there for. The young officer who is selected by his colonel to look after the affairs of the quartermaster's department in his regiment will soon learn that the selection was not made for the purpose of providing him with a soft berth; the colonel's idea may have been to make things easy for some one, but that someone is certainly not the young man who is to roll the wheel and wield the pen which are symbolic of the department in which he is to display his energies. His efforts will be directed toward securing the comfort and effectiveness of his comrades, and the greater the sacrifice of physical and mental energy on his part, the greater will be the certainty of the perfect achievement of the purpose of his employment. Often, like the Israelites in bondage, he will be expected to make bricks without straw, and the tax upon his resourcefulness will be seemingly out of proportion to the means which nature and an economical appropriation place at his command. If he is of the right stuff, he will make the best kind of brick that is possible out of the material that is provided, or obtainable.

In actual experience, the quartermaster in the field may make up his mind to discount in advance the difficulties and dangers he will have to encounter. It will be satisfaction enough for him to know, *after* the delivery of the bullets to the firing line, that, even though he has only the bell mare left, there has been no delay in furnishing all necessary supplies to his command, before, during and after the battle. His work is then done—until to-morrow.

Historical Miscellany.

HENRY WAGER HALLECK,
Captain Corps of Engineers

TYPES AND TRADITIONS OF THE OLD ARMY.

II. GENERAL HALLECK—A MEMOIR.*

By General James Grant Wilson, U. S. V.

LINCOLN'S authorized biography in commenting upon this appointment says: "It seemed at the moment the best that could be done. In his short Corinth campaign, Halleck had substantially demonstrated his unfitness for the leadership of an army in the field. He had made a grievous mistake in coming away from his department headquarters at St. Louis. He was a thinker and not a worker. His proper place was in the military study and not in the camp. No other soldier in active service equaled him in the technical requirements of his profession. The act of the President in bringing him to Washington restored him to his more natural duty. Nominally, he became general-in-chief, but in actual practice his genius fell short of the high duties of that great station. While he rendered memorable service to the Union, his judgment and resolution sometimes quailed before the momentous requirements of his office, and thrust back upon the President the critical and decisive acts which overawed him. In reality he was only what he afterward became by technical orders—the President's chief of staff."

Blaine assigns an additional motive for the appointment. He writes: "General Halleck, who had command of the Western Department, became anxious for reputation in the field, and was thought by many to be jealous of the daily increasing fame of General Grant. After the battle of Shiloh he took command in person of the army which Grant had already rendered illustrious, leaving Grant to command the right wing. Uniting the Western forces into one large army General Halleck marched southward in pursuit of the Confederate column now under command of Beauregard, and strongly intrenched at Corinth. As the army approached, Corinth was evacuated, and the campaign of General Halleck, leading to no important engagement, did not add to his military fame. Meanwhile, there had been increasing dissatisfaction in Congress and among the people with the supersedure of General Grant, and to relieve the situation, General Halleck was called to Washington in the early part of July to take command of the army which had been relinquished by McClellan in March when he set forth upon the Peninsular campaign. In the intervening months there had been no general-in-chief of the army, the duties being performed by the Secretary of War."†

*Concluded from May Journal.

†"Twenty Years of Congress from Lincoln to Garfield," by James G. Blaine, Vol. I, p. 363.

On General Halleck's arrival in Washington he immediately assumed command as General-in-Chief of the Armies of the North. Compelled to assume responsibilities that belonged to others, constantly thwarting the schemes of selfish men, and continued to be reticent upon public affairs which unscrupulous politicians and speculators desired to have divulged, Halleck was soon subjected to the shafts of the disappointed and disloyal men, and although with heart and soul devoted to the preservation of the Union, deeply regretted coming to the national capital. Writing to his wife, August 9th, he says: "I feel almost broken down every night with the heat, labor and responsibility. The President and Cabinet have thus far approved of everything I have proposed. This is kind and complimentary, but it only increases my responsibility, for if any disaster happens they can say we did for you all you asked. The great difficulty is to get the troops together in time. I have felt so uneasy for some days about General Pope's army that I could hardly sleep. I cannot get General McClellan to do what I wish. The President and Cabinet have lost all confidence in him and urge me to remove him from command. This is strictly *entre nous*. In other words, they want me to do what they were afraid to attempt! I hope I may never be obliged to follow their advice in this matter." Later Halleck writes to Grant: "I sincerely wish I was with you again in the West. I am utterly sick of this political Hell." On September 5th he writes to Mrs. Halleck: "I got McClellan's army here just in time to save us. Few can conceive the terrible anxiety I have had within the past month. I foresaw all that has occurred, but I feared to tell it to more than a few in strict confidence lest I should produce a panic. * * * * * Our real danger—the capture of Washington—I think is now past. * * * * * I hardly know how I am able to keep amidst the excitement and labors of my office. The generals all around me are quarreling among themselves, while I am doing all in my power to conciliate and satisfy. It is sad to witness the sefishness of men at this time of sore trial. * * * * * I want to go back to private life as soon as possible and never again put my foot in Washington." October 7th the general writes to his wife: "Everything would now be satisfactory if I could only get General McClellan to move. He has lain still *twenty days* since the battle of Antietam, and I cannot persuade him to advance an inch. It puts me out of all patience." November 9th he writes to Mrs. Halleck: "The news of General McClellan's removal is probably making a great stir in New York to-day. * * * * * It became a matter of absolute necessity. In a few weeks more he would have broken down the Government."

Of McClellan's repeated failure to obey the General-in-Chief's orders, his latest extremely able and most impartial biographer* says:

It subjected McClellan to the severest criticism, even to the extent that he was actuated by the desire of seeing Pope defeated in order that he might be rehabilitated in supreme military command. And even at this late day there exists a wide diversity of settled opinion between the partisans of both generals as to the motives of McClellan —opinions that received their initial direction at the time of the mpending crisis and which have become crystallized by passionate denunciation, injustice and the inability of men upon whom vast responsibilities were then committed accurately to gauge the springs of each other's action. In attempting to reach a rational solution we may with propriety assume that all the great actors were loyal patriots, much more concerned with the success of the cause than with their personal and professional fortunes. But this concession does not forbid the assumption of the hypothesis that Halleck, McClellan and Pope may each have entertained altogether different views as to the situation and military necessities of the time. McClellan has left on record the expression of his extreme distrust of Pope's military ability, and Pope had severely criticized that of McClellan in his testimony before the Committee on the Conduct of the War. Halleck had assured Pope also that he might with certainty expect the arrival of the reinforcements from the Army of the Potomac some days before they actually came. The delay that ensued in the execution of this promise caused Pope to feel that he was not willingly supported by McClellan, but this is now known to have been entirely unwarranted in point of fact.

Professor Michie also writes the following paragraph concerning McClellan's attitude toward General Halleck's instructions:

The foregoing quotations from Halleck's and McClellan's dispatches suffice to show that these two commanders had a very different view of the problem then confronting them, and consequently were often at cross purposes in their attempts to solve it. Uppermost in McClellan's mind was the imminent danger of the loss of Washington, and while he knew nothing of what had happened to Pope he was not apprehensive of the ultimate safety of his army, believing that, if defeated, he had an avenue of escape by way of the Occoquan. But the safety of Washington was a matter of supreme importance, and he felt that all his efforts should primarily be directed to that end. In addition to this, if we give due weight to the habit he had of overestimating the numbers and activity of the enemy, we will have a logical explanation of his conduct, which is in perfect keeping with all the characteristics that he had heretofore exhibited. These characteristics made him antagonistic to any aggressive movement toward Centreville, where the enemy were reported in force, and were in accord with that cautious preparation for defense of the line which was then vulnerable, and which, to his mind, it was so essential to hold. Halleck, on the other hand, by devoting the greater part of his time and energy to matters less of immediate importance, such as those connected with affairs in the West and raising new troops, failed to give that controlling and directing atten-

*"General McClellan," by Gen. Peter S. Michie, Great Commanders Series, New York, 1901.

tion to the crisis which was then involving the safety of Pope's army, an attention which was especially incumbent upon the general-in-chief at that time.

"The dispatches of Halleck," writes a historian of the period, "even after he became aware of the finding of Lee's lost order, conveyed to McClellan poor and superfluous counsel. His fears for the safety of Washington, his anxious suggestions of caution, showed blindness to McClellan's great fault, and no proper comprehension of the strategy needed in this campaign. Compare the division of authority among Halleck, McClellan and Wool, accompanied undoubtedly by pressure from the President and Secretary of War, with the management of the other side, where a single head directed all movements. Lee was supreme."*

While in obedience to the President's orders, the General-in-Chief in repeated dispatches urged Meade to attack Lee after Gettysburg. Halleck sent him the following telegrams inconsistent with the tone of the others. "Do not be influenced by any dispatch from here against your own judgment. Regard them only as suggestions." His second communication was even stranger: "I think it will be best for you to postpone a general battle until you are better prepared."

Moved by General Burnside's representations, in January, 1863, that Stanton and Halleck had not the confidence of the army, nor in his judgment of the country, and failed to assume the responsibility that was unquestionably theirs of giving him explicit orders after the Fredericksburg failure, Lincoln, with pardonable irritation, wrote to Halleck requesting him to come to some decision in regard to Burnside's plan of advance, which did not commend itself to the President, who said: "Your military skill is useless to me if you will not do this." This was followed fly an offer of his resignation by the General-in-Chief, and the withdrawal of the letter by Lincoln "because considered harsh by General Halleck." At this time Sherman wrote to his brother—the senator—in regard to the severe criticism of Halleck: "I hope the politicians will not interfere with Halleck." A member of the class of 1835† writes in 1901: "There is, and has been, a widespread misapprehension in regard to the interference of Halleck with the generals in command of armies in the field, and he has been censured by the press for giving orders that trammeled their liberty of action and resulted in disaster. This, I think, is an error, and does him great injustice. General Halleck has been severely censured for the orders given to Meade after the battle of Gettysburg. I am, perhaps, responsible for these orders more than any one else. At my interview with Meade on the next morning after Lee's retreat, I felt sure that if the rest of several days which he proposed to take were really taken,

*"History of the United States," by James F. Rhodes. 1899, Vol. IV, p. 147.
†Reminiscences of Gen. Herman Haupt, p. 302

the enemy would escape, and I urged General Halleck to give orders to commence pursuit immediately and prevent Lee from effecting a crossing of the Potomac back into Virginia. When Lee did escape, it was natural that great dissatisfaction should be felt, and it was to have been expected that such dissatisfaction should also be expressed when the fruits of the splendid victory at Gettysburg had been lost by inaction."

General Halleck continued to perform the duties of his office as general-in-chief until Congress revived the grade of lieutenant-general, and that rank was conferred on General Grant for his glorious campaigns of Vicksburg and Chattanooga, when he insisted that compliance should be made with the obvious intention of the law, and that being senior, Grant must of course become General-in-Chief. Soon after the President made the following changes, Halleck becoming Chief of Staff to the army, which position he occupied until the close of the Civil War. (See facsimile of G. O. 98 as follows):

GENERAL ORDERS, No. 98.

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
Washington, March 12, 1864.

The President of the United States orders as follows:

I..Major General H. W. HALLECK is, at his own request, relieved from duty as General-in-Chief of the Army, and Lieutenant General U. S. GRANT is assigned to the command of the Armies of the United States. The Headquarters of the Army will be in Washington, and also with Lieutenant General GRANT, in the field.

II..Major General H. W. HALLECK is assigned to duty in Washington, as Chief of Staff of the Army, under the direction of the Secretary of War and the Lieutenant General Commanding. His orders will be obeyed and respected accordingly.

III..Major General W. T. SHERMAN is assigned to the command of the Military Division of the Mississippi, composed of the Departments of the Ohio, the Cumberland, the Tennessee, and the Arkansas.

IV..Major General J. B. MCPHERSON is assigned to the command of the Department and Army of the Tennessee.

V..In relieving Major General HALLECK from duty as General-in-Chief, the President desires to express his approbation and thanks for the able and zealous manner in which the arduous and responsible duties of that position have been performed.

BY ORDER OF THE SECRETARY OF WAR:

E. D. TOWNSEND
Assistant Adjutant General.

OFFICIAL:

A month later General Halleck was assigned to the command of the Cavalry Bureau in addition to his important and responsible duties as chief of the army staff.

During Early's invasion of Maryland, Brigadier-General West sent a telegram from Philadelphia, inquiring of Halleck if he could be of any service in that vicinity, to which the chief of staff—possibly having in mind the proposal of Artemus Ward to raise a company composed "exclusively of officers, everybody to rank as brigadier-general" sent the following spicy reply: "We have five times as many generals here as we want, but are greatly in need of privates, Anyone volunteering in that capacity will be thankfully received."

Four months after General Halleck assumed his new position of chief of staff, and following the termination of General Early's raid upon Washington, the former, exasperated by the report of sarcastic comments which Montgomery Blair the Postmaster-General, under the provocation of the destruction of his property near Washington, had made on the cowardice of the defenders of the Capital, sent a note to the Secretary of War saying that he wished to know "whether such wholesale denouncement and accusation by a member of the Cabinet receives the sanction and approbation of the President of the United States. If so," Halleck continued, "the names of the officers accused should be stricken from the rolls of the army; if not, it is due to the honor of the accused that the slanderer should be dismissed from the Cabinet." The communication was forwarded without comment to Mr. Lincoln. The President replied to Stanton the same day, saying: "Whether the remarks were really made I do not know, nor do I suppose such knowledge is necessary to a correct response. If they were made, I do not approve them; and yet, under the circumstances, I would not dismiss a member of the Cabinet therefor. I do not consider what may have been hastily said in a moment of vexation, at so severe a loss, is sufficient ground for so grave a step. Besides this, truth is generally the best vindication against slander. I propose continuing to be myself the judge as to when a member of the Cabinet shall be dismissed." Not content with this, at the next meeting of his Cabinet, Lincoln read them the following impressive paragraph, one of the most remarkable statements ever made by a President. As his chief biographers remark: "The tone of authority is unmistakable. Washington was never more dignified; Jackson was never more peremptory." He said: "I must myself be the judge how long to retain in and when to remove any of you from his position. It would greatly pain me to discover any of you endeavoring to procure another's removal, or in any way to prejudice him before the public. Such endeavor would be a wrong to me, and, much worse, a wrong to the country. My wish is that on this subject no remark be made, nor question be asked by any of you,

here or elsewhere, now or hereafter." A few months later Mr. Blair was dismissed, and his place filled by the appointment of Governor William Dennison, of Ohio.

Later Halleck prevented the powerful and impatient Grant from removing Thomas. The Administration was also impatient. Stanton, in a whimsical strain, suggests to General Grant: "If he (Thomas) waits for Wilson to get ready, Gabriel will be blowing his last horn." The following day, December 8, 1864, Grant sends this message to Halleck: "If Thomas has not struck yet he ought to be ordered to hand over his command to Schofield." To this the Chief of Staff replies: "If you wish General Thomas relieved, give the order. No one here will, I think, interfere. The responsibility, however, will be yours, as no one here, so far as I am informed, wishes General Thomas relieved." The omnipotent Grant hesitated. Halleck's dispatch saved Thomas. Six days later the country was electrified by his glorious victory at Nashville, one of the greatest won by the North during the Civil War. Hood was not only defeated, but his army was destroyed.

In February, 1865, it was charged by General Wade Hampton, and other Southerners, that Sherman permitted the burning of Columbia, the capital of South Carolina, if he did not order it directly. The correspondence between Generals Halleck and Sherman was cited by Confederate writers to show premeditation on the part of the latter. "Should you capture Charleston," wrote Halleck, December 18, 1864, "I hope that by some accident the place may be destroyed, and if a little salt should be sown upon the site it may prevent the growth of future crops of nullification and secession." Six days later General Sherman replied: "I will bear in mind your hint as to Charleston, and don't think salt will be necessary. When I move, the Fifteenth Corps will be on the right of the right wing, and their position will bring them naturally into Charleston first; and if you have watched that corps you will have remarked that they generally do their work up pretty well. The truth is, the whole army is burning with an insatiable desire to wreak vengeance in South Carolina. I almost tremble at her fate, but feel that she deserves all that seems in store for her. I look upon Columbia as quite as bad as Charleston."

As to the manner in which Halleck performed the duties of his position in Washington during a trying period of nearly three years, we have the accompanying testimony of an accomplished British writer, Colonel Chesney, who, in his "Military Biography," writes: "Great praise had been justly bestowed on Sheridan for his nervous and energetic conduct in pursuit by which Lee was finally cut off. Nor less does Grant deserve it for the free and ungrudging manner in which he supported his ardent lieutenant. But he who, above all, should have earned honor for the conduct of that march now

sleeps in the grave; and it is due here to the reputation of General Halleck to say that to his stern and unflinching insistance on the necessity of bringing proper discipline to bear on the Federal volunteers was due much of the success with which the arms of the Union were crowned at the close of the war. Soldiers are ever dependent largely for their feeling of subordination on the conduct of those above them, and the improvement effected by Halleck's stern meaures extended constantly downward. The Army of the Potomac, which was at once the newest and most important of those which as Chief of the Staff he supervised, rose that year in its standard of discipline, if not to the level to which Europe, with the aid of caste traditions and reverence for rank, brings her standing forces, at least to a measure of efficiency which troops recruited as were these, the mixed volunteers and conscripts of a young republic, can seldom attain. And if Grant and Sheridan were able to press the success of Five Forks on to a complete triumph over the retreating Confederates; if the conduct of their troops after the victory of the second of April was in marked contrast to the lassitude and indifference which had hitherto followed advantages won on either side —the difference is to be found, not so much in the circumstances of the time, or the individual characters of the generals, as in the moral power of discipline, which had been left unused by both parties alike until Halleck brought it into play to add to the advantages of the North."

April 19, 1865, after Appomattox, when Grant's headquarters were established in Washington, General Halleck was relieved from duty as Chief of the Staff of the Army, and three days later he was assigned to the command of the Military Division of the James, with headquarters in the city of Richmond. Grant had established his headquarters in Washington, and transferred to Halleck command of the Armies of the Potomac and the James. In this capacity, filled with new zeal on the occasion of the Johnston Convention, Halleck had ordered Meade's army, disregarding the truce, to push forward against Johnston and to attack him, regardless of Sherman's orders. These orders, though they were nullified by the surrender, had injudicially been published. This new insult completed the measure of Sherman's anger. He broke out in open defiance of the authorities, who he thought were persecuting him with deliberate malice, and declared in a report to Grant that he would have maintained his truce at any cost of life. When Grant suggested that this was uncalled for, and offered him an opportunity to correct the report, Sherman refused to do so, avowing his readiness to obey all future orders of the President and the general, but insisted that his record should stand as written. He declined to meet Halleck in Richmond, and warned him to keep out of his way, and on ar-

riving in Washington publicly refused the proffered hand of Stanton at the grand review of the armies.* Happily, amicable relations were restored between these three patriotic Americans before they passed away. Hostilities having entirely ceased, and the volunteer forces mostly disbanded, Halleck was relieved from duty in Virginia and ordered to the Military Division of the Pacific, of which he took command August 30th, with headquarters in his former home, San Francisco. "The only trouble," writes Sherman in December, 1868, after Grant's election as President, "is in my successor. Halleck is out of the question; Meade comes next on the list, but is not a favorite. Sheridan comes next in order, and is Grant's preference, *I think*. Thomas could not be passed over if by the accidents of war Sheridan had not *already got over him*. Thomas is universally esteemed, but was not made a major-general till his battle at Nashville, whereas Sheridan, at least thirteen years younger in service, was made a major-general for his Winchester battle, the summer previous. So I think Sheridan will be chosen by Grant as lieutenant-general."

Here Halleck remained for nearly four years, when on March 16, 1869, he was transferred to Louisville,† being in command there from June 17th, to the time of his death in that city on January 9, 1872. His brother-in-law, General Hamilton, writes under date of August 21, 1902: "Our friendship was lifelong. He died in my arms and was buried in his plot in Greenwood Cemetery where his wife and son rest by his side. I bought the plot for him. It was to be near mine, for he made the quaint remark at the time: 'When I rise at the resurrection, I wish to see some of those who have been my friends in this life arising with me.' He was survived by Mrs. Halleck, a granddaughter of Alexander Hamilton, to whom he was married in 1855, and by their only child, Henry Wager, born in 1856.

Bishop Whipple, in his autobigraphy writes: "Halleck was a man of unflinching integrity, a hater of shams, and never considered policy in his actions. From the beginning of the Civil War he was loaded down with responsibilities which carried him to the grave. His first command was in Missouri where he brought order out of confusion, and saved Missouri from secession. His next command was in Missis-

*Nicolay and Hay's "Life of Lincoln," Vol. X, p. 254.

†Gen. George H. Thomas, who succeeded Halleck on the Pacific Coast, writes to him under date of Washington, D. C., March 16, 1869: "In the general break-up incident to a new administration, I find myself assigned to the command of the Military Division of the Pacific, and that you have been assigned to the Military Division of the South, with headquarters at Louisville, Ky. I learn at Army Headquarters that this assignment was insisted on by the President, and General Sherman informed me that he could not therefore choose, but give the order effect. This being the situation of affairs, I have written to say that I am directed to obey the order as soon as the Court of Inquiry for the investigation of charges against General Dyer has completed the duties assigned it. It will take us all of this month and perhaps part of April to complete our duties, so that I shall be able to start about the first of May."

sippi, where he won from his troops the sobriquet of 'Old Brains.' He was general-in-chief for a time, and afterward chief of staff to President Lincoln, whose confidence he retained throughout that eventful struggle. He was brusque in manner, and often made bitter enemies. I remember upon one occasion, when I was his guest, a prominent politician called upon him and said: 'I have asked the President to appoint three persons brigadier-generals. They are loyal men and deserve recognition. The President tells me that he has promised you and Secretary Stanton that he would not appoint men to high office in the army without your approval. I am here to consult you. Do you oppose their appointment?' The general turned with flashing eyes and exclaimed: 'I *am* opposed to their appointment! You cannot run this war machine with *political gas*.'"

Some months later the Bishop was invited to visit General Meade at his headquarters on the Rapidan. During his sojourn the general told his visitor that during the previous summer, some person, one night, came to his tent, and to the demand "Who's there?" a voice answered, "General Townsend" (the assistant adjutant-general). "I come to bring you a new burden. I have a commission for you as Commander of the Army of the Potomac." He also handed Meade a letter from General Halleck, pledging him the hearty support of the Government. On the Bishop's return to Washington, his kinsman gave him the following interesting account of the circumstances which led to Meade's appointment. Halleck said: "After the defeat of General Hooker at Chancellorville, President Lincoln met the Secretary of War and myself at the War Department. He asked 'Whom shall we appoint commander now? We cannot run Joe any more.' I told the President that I had tried to feel the pulse of the army, and I believed that General Meade was the man to appoint, but I also mentioned several other names, among them that of General Sedgwick, one of the ablest men in the service. The President proposed that we should ballot. Mr. Stanton voted for General Sedgwick, and the President and I voted for General Meade."

Grant's comments on his intercourse with General Halleck during the Civil War, as expressed to a friend a few years before the illustrious soldier's death, are valuable as his final judgment of Halleck's character, and of his services to his country. "In the early part of the war," said the conqueror of Lee, in 1879, "Halleck did very good service for which he has never received sufficient credit—I mean in his civic administration. Some of his orders were in anticipation, I think, of those of Butler, which gave him so much fame in New Orleans. He was, in addition, a very able military man. Halleck had intellect and great requirements outside of his military education. He was at the head of the California bar when the war broke out, and his appointment to the major-generalsy was a gratification to all who

know the old army. When I was made lieutenant-general, Halleck became chief of staff to the army. He was very useful, loyal and industrious, sincerely anxious for the success of the country, and without any feeling of soreness at being superseded. In this General Halleck was a contrast to other officers of equal ability who felt that, unless they had the command they craved, they were not needed. Halleck's immense knowledge of military science was of great use to those of us in the field. * * * * * After Fort Donelson I was in disgrace, and practically without a command, because of some misunderstanding on the part of Halleck. *It all came right in time.* I never bore Halleck ill will for it. He was in command, and it was his duty to command as he pleased."* Later in his "Memoirs," Grant wrote: "With all the pressure brought to bear upon them both, President Lincoln and General Halleck stood by me to the end of the (Vicksburg) campaign," speaking of the strong efforts made by the friends of other commanders for his removal. Grant told me that Halleck disapproved of his proposed movement after the capture of Vicksburg against Mobile, but later suggested his taking command at Chattanooga; also that soon after his arrival in Washington, when he said that he wanted a capable cavalry commander, Halleck suggested Sheridan. In conclusion the general remarked: "Halleck was an able and honest man, but was brusque and never popular, neither as a cadet at West Point, nor in the army."

Halleck's chief of staff, Gen. George W. Cullum, who married his widow, thus describes him: "Halleck had a strong, clear intellect, which enabled him to take a comprehensive grasp of the various important matters presented to his consideration, and was sustained in his conclusions by a most assiduous industry and self-reliant perseverance. Indeed, determination was his most marked characteristic, evinced in a calm firmness which neither entreaty nor persuasion could move from his fixed purpose. Of such a nature caution would be a prevailing quality. With those were united a modesty, almost shyness, and thus, perhaps, he did himself injustice, as his sensitiveness to the value of sincerity caused him often to repel rather than be deemed insincere. This known temperament secured him the most valuable estimation of his instructed and ablest fellow officers. His dryness of manner was no argument of want of heart, for indeed he was a warm, true, loyal friend, and in the inner circle of his life was tender and playful, showing a keen sense of humor. His home was a scene of perfect happiness, and kind hospitality. Of children he was fond, had an ardent love of Nature, and indulged the expectation of closing his latter years in a retreat in the beautiful region south of San Francisco, looking on the Pacific Ocean."†

*"Around the World with General Grant," by John Russell Young. 1879.

†"Biographical Register of the Officers and Graduates of the United States Military Academy," 1891, p. 739.

Under date of September 29, 1902, Gen. Joshua H. Bates, of the class of 1837, writes: "General Halleck was a personal friend whom I greatly respected. He was very popular and highly esteemed at the Military Academy, always occupying a position among the first five of his class. After my graduation we did not meet until after the battle of Shiloh, where he was in command when I visited the scene. When he was placed at the head of the army I had frequent interviews with him on public affairs and always found him wise and courteous. I know General Halleck was highly esteemed by President Lincoln and I have never heard a word disparaging him. He was a true man."

After almost four decades it appears to be still the fashion to abuse General Halleck. The illustrious soldiers, Grant and Sherman, had grievances against him, and the public, sympathizing with the popular heroes, became prejudiced against the brusque captain, who disdained to defend himself. It is not the writer's purpose to reopen the misunderstandings of the two great commanders, and others, with their military superior, and I will merely remark that it is difficult to reverse the received verdicts of popular opinion. As a wise man once said, the process of whitewashing involves so much blackwashing that it had better be left for Halleck's military dispatches of the Civil War period, included in 132 volumes of official Rebellion records issued by the Government, to vindicate his memory. These documents, I believe, will be successful in reversing, in a measure, many prejudiced judgments of the patriotic and scholarly soldier who sacrificed his life in the earnest, loyal and unselfish efforts to maintain and uphold the integrity of the National Government Great men not infrequently have great faults, and to ignore them is to falsify history. Freedom from infirmities is not claimed for the General-in-Chief, but it would seem that his shortcomings have been grossly exaggerated. Halleck, it will be remembered, held several important positions during the Rebellion, first as chief commander in the West, as general-in-chief at Washington, later chief of staff to the President, and then as commander of the Military Division of the James, with headquarters at Richmond. Many orders of the President and the Secretary of War were issued by the Chief of Staff of which he did not approve, and for which he was held responsible by the people, and severely criticized. As in the Early raid on Washington of July, 1864, Halleck was unjustly condemned for avoiding responsibility which he was not certain that he was warranted in taking, when his three military superiors, Lincoln, Grant and Stanton, were on the spot, or near at hand. Nicolay and Hay, in Lincoln's biography, remark: "General Grant's distance from the scene and lack of perfect knowledge of the situation; the President's unwillingness to interfere with his orders, and Halleck's reluctance to assume authority which he believed did

not belong to him, were the causes to which may be attributed the unsatisfactory progress of affairs during this discouraging midsummer season." Another instance of injustice to Halleck was in regard to the order which he issued while in Richmond to certain officers "to pay no regard to any truce or orders of General Sherman respecting hostilities, on the ground that Sherman's agreement could bind his own command only, and no other," and "to push onward, regardless of orders from any one except General Grant, and cut off Johnston's retreat." The responsibility for this order was *not* Halleck's, but his superiors."

General Halleck might have truthfully echoed the words of Stanton in assuming the office of Secretary of War: "Turning to neither the right hand nor to the left, serving no man, and at emnity with none, I shall strive to perform my whole duty in the great work before me. Mistakes I may commit, but the purpose of my actions shall be single to the public good."

As an addenda to the preceding brief biography, a number of General Halleck's letters follow, including an interesting series of sixteen letters, or parts of letters, written to Mrs. Halleck, and never before printed, together with valuable communications addressed to Halleck by Lincoln, Grant, Meade, Hooker, and other prominent persons of that eventful period.

APPENDIX.*

[R] GENERAL HOOKER TO GENERAL HALLECK.

HEADQUARTERS ARMY OF THE POTOMAC.

June 24, 1863.

MAJOR-GENERAL HALLECK: The aspect of the enemy is not much changed from yesterday. Ewell, I conclude, is over the river, and is now up the country, I suppose, for purposes of plunder. The yeomanry of that district should be able to check any extended advance of that column, and protect themselves from their aggression.

Of the troops that marched to the river at Shepardstown yesterday, I cannot learn that any have crossed, and as soon as I do shall commence moving myself, and indeed am preparing by new acquisitions for that event, the others are ready.

General French is now on his way to Harper's Ferry, and I have given directions for the force at Poolesville to move and report to him, and also for all of Stahl's cavalry, and if I can do it without attracting observation I shall send over a corps or two from here, in order, if possible, to sever Ewell from the balance of the rebel army, in case he should make a protracted sojourn with his Pennsylvania neighbors.

If the enemy should conclude not to throw any additional force over the river, I desire to make Washington secure, and with all the force I can muster strike for his line of retreat in the direction of Richmond. I cannot learn the strength of Heintzelman's and Schenck's commands, nor where they are stationed, and hence I send my chief of staff to Washington and Baltimore to ascertain, and also

*Continued from May, page 559

to start out a column of about fifteen thousand men on the national road as far as Frederick City. In any contingency, whether of an advance or retreat of the enemy, the defense of Washington or Baltimore, this amount of force should be there, and they should be held in readiness to march, which fact I will not be able to know until I put them on the road. I will send the best officers I have to command this body.

I desire that instructions may be given Generals Heintzelman and Schenck to direct their commands to obey promptly any orders they may receive from me. Last evening the colonel commanding at Poolesville responded to his orders to march, that he did not belong to my command, but would refer his orders to General Heintzelman. Such delays may bring us reverses. When these instructions are given I shall not be necessitated to repeat orders to any part of my command to march on the enemy.

Allow me to suggest that the new troops arriving in Baltimore and Washington be at once put in the defences, and the old ones, except those serving with the artillery, be put in marching condition. If this should be done, and quickly, I think that we may anticipate glorious results from the recent movement of the enemy, whether he should determine to advance or retreat. I request that my orders be sent me to-day for outside of the Army of the Potomac I don't know whether I am standing on my head or feet.

Very respectfully, &c.,
JOSEPH HOOKER,
Major-General, Commanding.

* * * * * *

[S] GENERAL HALLECK TO MAJOR-GENERAL GRANT, Vicksburg.

(Private and confidential.) HEADQUARTERS OF THE ARMY,
Washington, July 11, 1863.

MY DEAR GENERAL: Gen. G. G. Meade has been appointed a brigadier-general in the Regular Army at the same time that you are made a major-general. There is still one vacant brigadier-general, and I hope that Harney, Cooke and Anderson will soon be retired, making three more vacancies.

The most prominent candidates at present for brigadier-generals in the Regular Army are W. T. Sherman, McPherson, Thomas, Sedgwick and Hancock. I am of the opinion that Sherman and McPherson have rendered the best service, and should come in first. If you think so, write an official letter to that effect, urging their appointment to the first vacancies. State their services pretty fully, and mention the battles that they have been in under your command. The feeling is very strong here in your favor, and there will be a strong disposition to grant any favor you may ask for your generals.

We are anxiously waiting to hear of the fall of Vicksburg, Port Hudson, etc., and the entire opening of the Mississippi River. The President will then issue a general order congratulating the armies of the East and West on their recent victories. This consideration has prevented me from issuing one myself for your army. I prefer that it should come from the President.

Meade has thus far proved an excellent general—the only one in fact who had ever fought the Army of the Potomac well. He seems

to be the right man in the right place. Hooker was worse than a failure. Had he remained in command he would have lost the army and the capital.

Give my kindest regards to my old friends among your officers. I sincerely wish I was with you again in the West. I am utterly sick of this political hell.

Very truly yours,

H. W. HALLECK.

[T] GENERAL HALLECK TO GENERAL MEADE.

HEADQUARTERS OF THE ARMY,

Washington, July 28, 1863.

MAJOR-GENERAL MEADE,

Army of the Potomac, Warrenton, Va.:

GENERAL: I take this method of writing you a few words which I could not well communicate in any other way. Your fight at Gettysburg met with the universal approbation of all military men here. You handled your troops in that battle as well as, if not better than, any general has handled his army during the war. You brought all your forces into action at the right time and place, which no commander of the Army of the Potomac has done before. You may well be proud of that battle. The President's order, or proclamation, of July 4th, showed how much he appreciated your success.

And now a few words in regard to subsequent events. You should not have been surprised or vexed at the President's disappointment at the escape of Lee's army. He had examined into all the details of sending you reinforcements, to satisfy himself that every man could who possibly be spared from other places had been sent to your army.* He thought that Lee's defeat was so certain that he felt no little impatience at his unexpected escape. I have no doubt, General, that you felt the disappointment as keenly as any one else. Such things sometimes occur to us without any fault of our own. Take it altogether, your short campaign has proved your superior generalship, and you merit, as you will receive, the confidence of the Government and the gratitude of the country.

Very respectfully, your obedient servant,

H. W. HALLECK.

* * * * *

[U] GENERAL MEADE TO GENERAL HALLECK.

HEADQUARTERS ARMY OF THE POTOMAC,

July 31, 1863.

MAJOR-GENERAL HALLECK, *General-in-Chief.*

MY DEAR GENERAL: * * * * * The expression you have been pleased to use in your letter—to wit, "a feeling of disappointment"—is one that I cheerfully accept, and readily admit was as keenly felt by myself as any one. But permit me, dear General, to call your attention to the distinction between disappointment and dissatisfaction. The one was a natural feeling, in view of the momentous consequences that would have resulted from

*A few troops whose terms of enlistment had expired, Smith's unmanageable militia, and Gordon's division which arrived the day after Lee crossed the Potomac.

a successful attack, but does not necessarily convey with it any censure. I could not view the use of the latter expression in any other light than as intending to convey an expression of opinion on the part of the President that I had failed to do what I might and should have done. * * * * * It was, I assure you, with such feelings that I applied to be relieved. It was not from any personal considerations, for I have tried in this whole war to forget all personal considerations, and have always maintained they should not for an instant influence any one's actions.

Of course, you will understand that I do not agree that the President was right, and I feel sure, when the true state of the case comes to be known, that however natural and great may be the feeling of disappointment, no blame will attach to any one.

Had I attacked Lee the day I proposed to do so, and in the ignorance that then existed of his position, I have every reason to believe the attack would have been unsuccessful, and would have resulted disastrously. This opinion is founded on the judgment of numerous distinguished officers after inspecting Lee's vacated works and position. Among these officers I could name Generals Sedgwick, Wright, Slocum, Hays, Sykes, and others.

The idea that Lee abandoned his lines early in the day that he withdrew I have positive intelligence is not correct, and that not a man was withdrawn till after dark. I mention these facts to remove the impression which newspaper correspondents have given to the public, that it was only necessary to advance to secure an easy victory. I had great responsibility thrown on me. On one side were the known and important fruits of victory, and on the other the equally important and terrible consequences of a defeat. I considered my position at Williamsport very different from that at Gettysburg. When I left Frederick it was with the firm determination to attack and fight Lee, without regard to time or place, as soon as I could come in contact with him; but after defeating him, and requiring him to abandon his schemes of invasion, I did not think myself justified in making a blind attack simply to prevent his escape, and running all the risks attending such a venture. Now, as I said before this, perhaps I erred in judgment, for I take this occasion to say to you, and through you to the President, that I have no pretensions to any superior capacity for the post he has assigned me to; that all I can do is to exert my utmost efforts and do the best I can; but that the moment those who have a right to judge my actions think, or feel satisfied, either that I am wanting or that another would do better, that moment I earnestly desire to be relieved, not on my own account, but on account of the country and the cause."

* * * * *

[V] GENERAL HALLECK TO GENERAL SHERMAN.

Washington, October 1, 1863.

MAJOR-GENERAL SHERMAN, *Vicksburg.*

MY DEAR GENERAL: I have received and read with interest yours of September 17th. I fully concur with you that this Rebellion must be put down by military force; is cannot be compromise and offers of peace, as proposed by Northern copperheads. The conquered territory must also be governed by military authority until the time arrives for reconstruction. I have always opposed the organization

of a civico-military government, under civilians. It merely embarrasses the military authorities without effecting any good. Nevertheless, if the people of any section will organize locally against the Confederacy and in favor of the Union it would give us great assistance. General Banks thinks that this can be done in Louisiana. Perhaps he is too sanguine.

In asking the views of yourself, General Grant, and others who have had full and personal experience with these people, I hoped to be able to give the President correct opinions whenever he should ask them. The advice of politicians generally on this question I regard as utterly worthless—mere Utopian theories.

Your letter in regard to General Buell hits the nail on the head. I have never had other than friendly feelings toward Buell, and saved him several time when the Government had determined on his removal. Instead of any gratitude for this, he and his friends have not ceased to abuse me and to claim for him credit he does not deserve. He never once suggested the operations on Forts Henry and Donelson and up the Tennessee River, but strenuously opposed the plan, and I could get no assistance from him till I appealed to the President.

The same with McClellan. I did everything in my power to prevent his removal after I arrived here. This he knew perfectly well. Instead of any gratitude for this, he and his friends then and ever since have done all in their power to injure me. I have made no reply to their misstatements and abuse, nor do I intend to so long as the war lasts or I am in command. If I do not survive the war, sufficient materials for a correct understanding of my acts are on record and will be found by the future historian who seeks the truth. We all have enough to occupy us in the present, without discussing the past or seeking for premature fame. Those who indulge most in personal discussions will find it worse for them in the end.

Duty, Duty, Duty is the only proper motto now for military officers.

I am sorry to say that many of the generals commanding armies exhibit a very bad spirit. They seek rather to embarrass the Government and make reputations for themselves than to put down the rebellion. General Grant and a few others are most honorable exceptions.

Your ranks cannot be filled by the present draft. It is almost a failure, as nearly everybody is exempt. It takes more soldiers to enforce it than we get by it. A more complicated, defective and impracticable law could scarcely have been framed. Moreover, the copperheads of the North have done everything in their power to render it inoperative.

Yours truly,

H. W. HALLECK.

[W] GENERAL HALLECK TO GENERAL GRANT.

HEADQUARTERS OF THE ARMY,
Washington, D. C., Feb'y 17, 1864.

MAJOR-GENERAL GRANT,
Nashville, Tenn.

GENERAL: Your letter of the 12th inst. is just received. I fully concur with you in regard to the present condition of affairs in East Tennessee. It certainly is very much to be regretted that the fatal

mistake of General Burnside has permitted Longstreet's army to winter in Tennessee. It is due to yourself that a full report of this matter should be placed on file so that the responsibility may rest where it properly belongs.

The condition of affairs in East Tennessee and the uncertainty of General Banks' operations in Texas and Louisiana have caused me to delay answering your former communication in regard to operations of the campaign. In one of these you suggest whether it might not be well not to attempt anything more against Richmond and to send a column of sixty thousand men into North Carolina.

In the first place I have never considered Richmond as the necessary objective point of the Army of the Potomac; that point is Lee's army. I have never supposed that Richmond would be taken till his army was defeated or driven away. It was one of Napoleon's maxims that an army covering a capital must be destroyed before attempting to capture or occupy that capital. And now how can we best defeat Lee's army; by attacking it between here and Richmond on our shortest line of supplies and in such a position that we can combine our whole force, or by a longer time and with a force diminished by the troops required to cover Washington and Maryland?

The movement through Carolina attended to by you and also one from Port Royal on Savannah and into Georgia have been several times suggested here and pretty fully discussed by military men. It is conceded by those suggesting these expeditions that neither of them can be safely undertaken with a less force than that estimated by you, viz.: sixty thousand effective men. Some require a still larger force.

If we admit the advantage of either of these plans, the question immediately arises, where can we get the requisite number of troops?

There is evidently, a general public misconception of the strength of our army in Virginia and about Washington. Perhaps it is good policy to encourage this public error. The entire effective force in the fortifications about Washington and employed in guarding the public buildings and stores, the aqueduct and railroads does not exceed eighteen thousand men. We have a few thousand more in the convalescent and distribution camps and in the cavalry and artillery depots, but these are mostly fragments of organizations temporarily here for equipment and distribution and could contribute very little to the defense of the place. This power is therefore less than one-half of what General McClellan and several boards of officers recommended as the permanent garrison. Considering the political importance of Washington and the immense amount of military stores here it would be exceedingly hazardous to reduce it still further.

The effective force of the Army of the Potomac is only about seventy thousand. General Meade retreated before Lee with a very much larger force and he does not now deem himself strong enough to attack Lee's present army.

Suppose we were to send thirty thousand men from that army to North Carolina, would not Lee be able to make another invasion of Maryland and Pennsylvania? But it may be said that by operating in North Carolina we would compel Lee to move his army there. I do not think so. Moreover, Washington and the Potomac River and all the forces which Lee can collect will be moved north and the popular sentiment will compel the Government to *bring back* the army in North Carolina to defend Washington and Philadelphia. I think

Lee would to-morrow exchange Richmond, Raleigh and Wilmington for the possession of either of the afore-mentioned cities.

But suppose it were practicable to send thirty thousand men from Meade's army to North Carolina, where should we get the other thirty thousand? We have there now barely enough to hold the points which it is necessary to occupy in order to prevent contraband trade. Very few of these would be available for the field. Maryland is almost stripped of troops, and the forces in West Virginia are barely sufficient to protect that part of the country from rebel raids. The only other resource is South Carolina.

Generals Foster and Gillmore were both of opinion at the commencement of operations against Charleston that neither that place nor Savannah would be taken by a land force of less than sixty thousand (60,000) men. Large land and naval forces have been employed there for nearly a year without any important results. I had no faith in the plan at first, and for months past have ineffectually urged that ten or fifteen thousand men from Gillmore's command be sent against Texas or Mobile. And now these troops are sent upon another expedition which, in my opinion, can produce no military result.

I always have been and am still opposed to all these isolated expeditions on the sea and Gulf coasts. It is true they greatly assist the navy in maintaining the blockade and preventing contraband trade; but I think the troops so employed would do more good if concentrated in some important line of military operations. We have given too much attention to cutting the toe-nails of our enemy instead of grasping the throat.

You will perceive from the fact stated above that there are serious if not insurmountable obstacles in the way of the proposed North Carolina expedition. Nevertheless, as it has much to recommend it, I shall submit it, with your remarks, to the consideration of the President and Secretary of War, as soon as troops enough return from furlough to attempt any important movement in this part of the theater of war.

Lee's army is by far the best in the rebel service, and I regard him as their ablest general. But little progress can be made here till that army is broken or defeated. There have been several good opportunities to do this, viz.: at Antietam, at Chancellorville and at Williamsport, in the retreat from Gettysburg. I am also of opinion that General Meade could have succeeded recently at Mine Run had he persevered in his attack.

The overthrow of Lee's army being the object of operations here, the question arises how can we best attain it? If we fight that army with our communication open to Washington so as to cover this place and Maryland, we can concentrate upon it nearly all of our forces on this frontier; but if we operate by North Carolina or the Peninsula, we must act with a divided army and on exterior lines, while Lee with a short interior line can concentrate his entire force upon either fragment.

And yet, if we had troops enough to secure our position here, and at the same time to operate with advantage on Raleigh or Richmond, I would not hesitate to do so, at least for a winter or spring campaign. But our numbers are not sufficient in my opinion to attempt this, at least for the present. Troops sent south of James River cannot be brought back in time to oppose Lee should he attempt a movement north, which I am satisfied would be his best policy.

Our main efforts in the next campaign should unquestionably be made against the armies of Lee and Johnson. But by what particular lines we shall operate cannot be particularly determined until the affairs of East Tennessee are settled and we can know more nearly what force can be given to the Army of the Potomac. In the meantime it will be well to compare views and opinions. The final decision of this question will probably depend under the President upon yourself.

It may be said that if General McClellan failed to take Richmond by the Peninsular route, so also have Generals Burnside, Hooker and Meade failed to accomplish that object by the shorter and more direct route. This is all very true, but no argument can be deduced from this bare fact in favor of either plan of operations. General McClellan had so large an army in the spring of 1862 that possibly he was justified in dividing his forces and adopting exterior lines of operations. If he had succeeded, his plan would have been universally praised. He failed, and so also have Burnside, Hooker and Meade on an interior route; but their armies were far inferior in number to that which McClellan had two years ago. These facts in themselves prove nothing in favor of either route, and to decide the principles in regard to interior and exterior lines, objective points, covering armies, divided forces, etc.—these fundamental principles require, in my opinion, that all our available forces in the East should be concentrated against Lee's army. We cannot take Richmond (at least with any military advantage) and we cannot operate advantageously on any point from the Atlantic Coast till we destroy or disperse that army. And the nearer to Washington we can fight it the better for us. We can there, or between here and Richmond, concentrate against him more men than anywhere else. If we cannot defeat him here with our combined force, we cannot hope to do so elsewhere with a divided army.

I write to you plainly and frankly, for between us there should be no reserve or concealment of opinions. As before remarked, I presume that, under the authority of the President, the final decision of these questions will be referred to you. Nevertheless, I think you are entitled to have, and that it is my duty to frankly give, my individual opinion on the subject. It will no doubt be received for what it may be intrinsically worth. I can ask or expect nothing more.

In regard to the operations of our Western armies, I fully concur in your views; but I think the condition of affairs in East Tennessee and west of the Mississippi River will require some modification in your plans, or at least will very much delay the operations of your proposed spring campaign. There, however, are delays and changes which neither of us could anticipate.

Very respectfully, your obedient servant,

H. W. HALLECK,
General-in-Chief.

[X] GENERAL GRANT TO GENERAL HALLECK.

HEADQUARTERS ARMIES OF THE UNITED STATES.

Near Spottsylvania Court House, May 11, 1864, 8:30 A.M.

MAJ.-GEN. H. W. HALLECK, *Chief of Staff:*

We have now ended the sixth day of very heavy fighting. The result to this time is much in our favor. But our losses have been heavy, as well as those of the enemy. We have lost to this time eleven

general officers, killed, wounded and missing, and probably 20,000 men. I think the loss of the enemy must be greater, we having taken over 4000 prisoners in battle, while he has taken but few except stragglers. I am now sending back to Belle Plain all my wagons for a fresh supply of provisions and ammunition, and propose *to fight it out on this line if it takes all summer.*

The arrival of reinforcements here will be very encouraging to the men, and I hope they will be sent as fast as possible, and in as great numbers. My object in having them sent to Belle Plain was to use them as an escort to our supply train. If it is more convenient to send them out by train to march from the railroad to Belle Plain or Fredericksburg send them so. I am satisfied the enemy are very shaky, and are only kept up to the mark by the greatest exertions on the part of their officers, and by keeping them intrenched in every position they take. Up to this time there is no indication of any portion of Lee's army being detached for the defense of Richmond.

U. S. GRANT,
Lieutenant-General.

* * * * *

[Y] GENERAL HALLECK TO GENERAL SHERMAN.

(Private and confidential.) HEADQUARTERS OF THE ARMY,
Washington, D. C., December 30, 1864.

MAJ.-GEN. W. T. SHERMAN,
Savannah:

MY DEAR GENERAL: I take the liberty of calling your attention, in this private and friendly way, to a matter which may possibly hereafter be of more importance to you than either of us may now anticipate. While almost every one is praising your great march through Georgia and the capture of Savannah, there is a certain class, having now great influence with the President, and very probably anticipating still more on a change of Cabinet, who are decidedly disposed to make a point against you—I mean in regard to "Inevitable Sambo." They say that you have manifested an almost *criminal* dislike to the negro, and that you are not willing to carry out the wishes of the Government in regard to him, but repulse him with contempt. They say you might have brought with you to Savannah more than 50,000, thus stripping Georgia of that number of laborers and opening a road by which as many more could have escaped from their masters; but that instead of this you drove them from your ranks, prevented them from following you by cutting the bridges in your rear, and thus caused the massacre of large numbers by Wheeler's cavalry.

To those who know you as I do such accusations will pass as the idle winds, for we presume that you discouraged the negroes from following you simply because you had not the means of supporting them and feared they might seriously embarrass your march. But there are others, and among them some in high authority, who think, or pretend to think, otherwise, and they are decidedly disposed to make a point against you.

I do not write this to induce you to conciliate this class of men by doing anything which you do not think right and proper and for the interest of the Government and the country, but simply to call your attention to certain things which are viewed here somewhat differ-

ently than from your standpoint. I will explain as briefly as possible. Some here think that, in view of the scarcity of labor in the South, and the probability that a part, at least, of the able-bodied slaves will be called into the military service of the rebels, it is of the greatest importance to open outlets by which the slaves can escape into our lines, and, they say, that the route you have passed over should be made the route of escape and Savannah the great place of refuge. These I know are the views of some of the leading men in the administration, and they now express dissatisfaction that you did not carry them out in your great raid.

Now that you are in possession of Savannah, and there can be no further fears about supplies, would it not be possible for you to reopen these avenues of escape for the negroes without interfering with your military operations? Could not such escaped slaves find, at least, a partial supply of food in the rice-fields about Savannah, and occupation in the rice and cotton plantations on the coast?

I merely throw out these suggestions; I know that such a course would be approved by the Government, and I believe that a manifestation on your part of a desire to bring the slaves within our lines will do much to silence your opponents.

You will appreciate my motives in writing this private letter.

Yours truly,

H. W. HALLECK.

* * * * * *

[Z] GENERAL HALLECK TO GENERAL SHERMAN.

HEADQUARTERS OF THE ARMY,

Washington, December 18, 1864. (Via Hilton Head.)

MAJ.-GEN. W. T. SHERMAN,

Savannah:

MY DEAR GENERAL: Yours of the 13th, by Major Anderson, is just received. I congratulate you on your splendid success, and shall very soon expect to hear of the crowning work of your new campaign in the capture of Savannah. Your march will stand out prominently as the great one of this great war. When Savannah falls, then for another raid south through the center of the Confederacy. But I will not anticipate. General Grant is expected here this morning, and will probably write you his own views. I do not learn from your letter or from Major Anderson that you are in want of anything which we have not provided at Hilton Head. Thinking it possible that you might want more field-artillery, I had prepared several batteries, but the great difficulty of foraging horses on the coast will prevent our sending any unless you actually need them. The hay crop this year is short, and the Quartermaster's Department has great difficulty in procuring a supply for our animals. General Thomas has defeated Hood near Nashville, and it is hoped that he will completely crush his army. Breckinridge, at last accounts, was trying to form a junction near Murfreesborough; but as Thomas is between them Breckinridge must either retreat or be defeated. General Rosecrans made very bad work of it in Missouri, allowing Price with a small force to overrun the State and destroy millions of property. Orders have been issued for all officers and detachments having three months or more to serve to rejoin your army via Savannah; those having less than three months to serve will be retained by General Thomas.

Should you capture Charleston, I hope that by some accident the place may be destroyed, and if a little salt should be sown upon its site it may prevent the growth of future crops of nullification and secession.

Yours truly,

H. W. HALLECK,
Major-General and Chief of Staff.

* * * * *

[Z 1] HEADQUARTERS OF THE ARMY,
Washington, April 10, 1865.

MAJ.-GEN. W. T. SHERMAN:

MY DEAR GENERAL: Sergeant Rose brought me your letter and report yesterday. I have given him $20 and a ticket to Iowa, via both South Bend and Chicago, so that he will be certain to find Mrs. S. I have read your report with the greatest pleasure. It will be immediately published in the "Gazette." We are now amidst the excitement of victory, speeches, &c., on the news of the surrender of Lee's army. I hope soon to hear of Johnston's to you, and of Mobile to Canby. They can have no possible hopes now, and it is utterly useless to waste any more blood. If Johnston will surrender as Lee has I presume you will give him the same terms. Beauregard, Bragg and Hardee deserve no consideration. I congratulate you on your great marches and able combinations. You speak in your note of advancing north to the Roanoke. I presume that the next day you heard of the fall of Richmond and changed your line upon Raleigh and Greensborough. Stoneman, on the 31st ultimo, was at Statesville, and by this time should have rescued our prisoners at Salisbury and have destroyed the railroad toward Greensborough. Should Johnston fall back on Danville he will be hopelessly hemmed in between you and Grant, and must surrender. It is believed that Wilson has taken Selma and is moving south to join Canby. We are fitting out Pope and Reynolds for operations west of the Mississippi. I hope in a very short time to be able to say and feel that the rebellion is virtually at an end.

H. W. HALLECK,
Major-General and Chief of Staff.

* * * * *

[Z 2] GENERAL HALLECK TO SECRETARY STANTON.

Richmond, Va., April 24, 1865.

Hon. E. M. STANTON:

I propose that the following order be issued:

"By direction of the President of the United States it is ordered as follows: *First.* All restrictions in regard to domestic commerce and trade, except as to articles contraband of war with the State of Virginia as insurgent territory, are hereby revoked in respect to the ports and counties of that State which have duly submitted to the authority or are in the military possession of the United States. *Second.* All restrictions upon travel to and from the ports of Virginia hereinbefore mentioned are hereby suspended, so far as regards loyal citizens of the United States and those who have taken the prescribed oath under the amnesty proclamation of the President. *Third.* The

commanding general of the Military Division of the James is authorized to make such exceptions to the above articles as in his opinion circumstances may require.

"By order of the Secretary of War."

I think the above would give great satisfaction, and afford immediate relief to Richmond and the surrounding country. I have had interviews with several prominent gentlemen from the interior. They all say that the people are ready and anxious to return to the Union. They are very destitute of provisions, and unless they can be relieved many will resort to robbery. Most of them, however, can provide for themselves if trade is opened so that they can purchase provisions and seeds.

W. H. HALLECK,
Major-General.

* * * * *

[Z 3] GENERAL HALLECK TO GENERAL GRANT.

Richmond, Va., May 5, 1865, 4 P. M.

LIEUT.-GEN. U. S. GRANT:

I ordered the arrest of Smith when I first arrived. Think he has gone to South Carolina. Have ordered General Schofield to endeavor to catch him. Have also ordered the arrest of Letcher. Hunter is said to be quietly at his home advising all who visit him to support the Union cause. His hostility to Davis did much to make him (Davis) unpopular in Virginia. Considering these and the fact that President Lincoln advised against disturbing Mr. Hunter at this time, I would prefer to not arrest him unless specially ordered to do so. All classes are offering to take the amnesty oath, and those excluded from its benefit are nevertheless taking it and making petitions for pardon. It would be unfortunate to check by unnecessary arrests this general desire for amnesty. Many of Lee's officers have come forward to take the oath, and it is reported that even Lee himself is considering the propriety of doing so and of petitioning President Johnson for pardon. Should he do this the whole population with few exceptions will follow his example.

H. W. HALLECK,
Major-General.

THE EVOLUTION OF THE HORSE.

(The Scientific American.)

AT the American Museum of Natural History, Prof. Henry Fairfield Osborn recently gave six lectures under the auspices of the trustees of Columbia University, entitled "The Jesup Lectures on the Evolution of the Horse." The lectures were illustrated, and covered first the the recent and past researches of Prof. Osborn and his assistants (especially Mr. J. W. Gidley) and of other investigators on the fossil horses of America and Europe; second, the mass of writings by American and European zoologists upon the origin and evolution, relationships, structure and habits of the breeds of domesticated and wild horse, and of their near relatives, the asses and zebras. The following is an abstract of the lectures covering the first series of topics mentioned: The various races of the horse family furnish a beautiful example of adaptation, or the adjustment of the organism to its surroundings. In every animal of to-day the remnants of adaptations belonging to the remote past are mingled with adaptations to the present, and many characteristics of the domestic horse may be regarded as inherited adaptations of remote antiquity. Thus the habit of carrying the head high is a reminder of the time when the wild stallion at the head of the herd had to be always on the watch for foes; the sudden shying is an instinctive memory of the days when a quick jump to one side might save a horse from the sudden spring of a beast of prey; while bucking is a device for shaking an enemy off the back. Again, the usefulness of the horse for cavalry exercises depends upon his having inherited an instinct for acting in concert with his fellows.

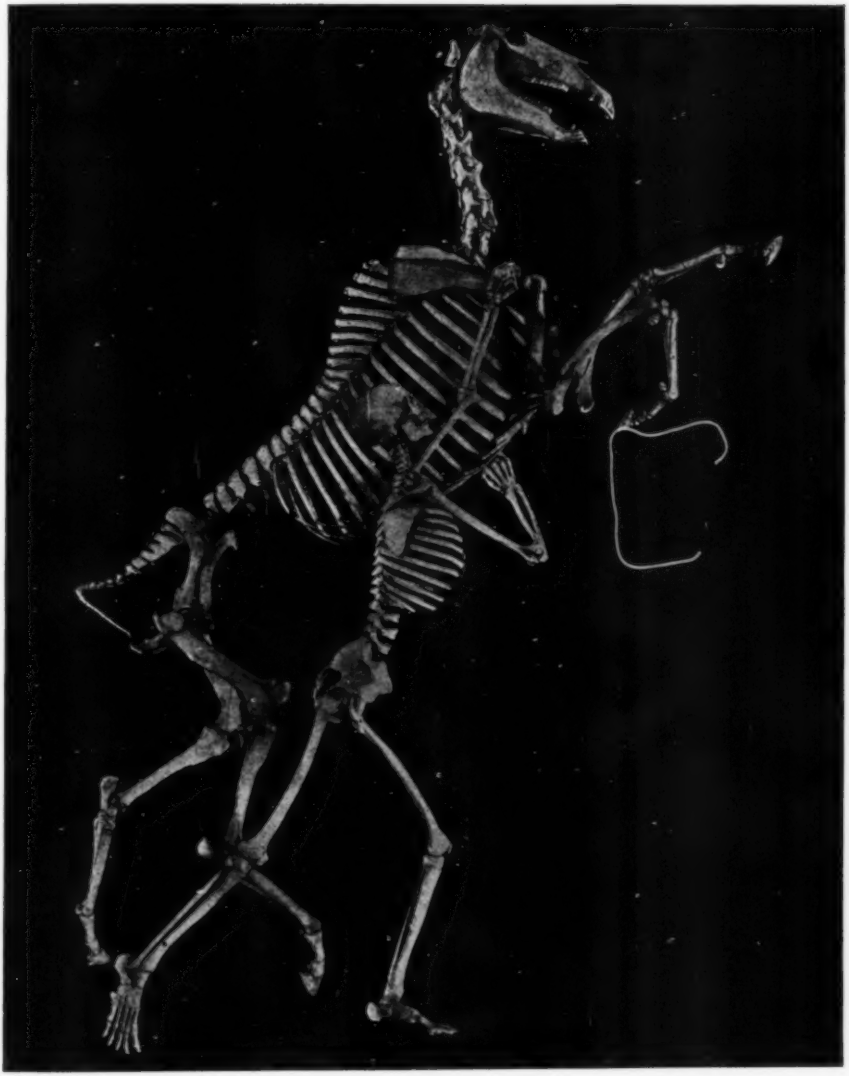
The several parts and habits of a horse are also adjusted to each other, and these natural adjustments were what first made the horse valuable to man. Thus the horse is a quadruped, seeking safety and food by its speed and traveling power; it is also a "soliped," with stilt-like legs, walking on the tips of its single toes; and being a grazer and browser, its neck must be long enough to bring the lips to the

ground. As a traveler it has acquired varied limb action and gaits, and also varied experiences, which have served to increase its resourcefulness and intelligence. Not being defended by horns or tusks, it uses its hoofs collectively as a weapon, which is particularly powerful and effective, the young being frequently defended from wolves by a ring of desperate hoofs. Since the chief enemies of the horse are the larger carnivores, it has developed quickness of sense and movement, and the young must be able to run with the herd at birth.

It is true that the horse is a complex "machine"; but it is more. No mere machine is self-perpetuating, no machine becomes perfected through long-continued use.

One of our photographs represents a beautifully mounted group consisting of a skeleton of a horse rearing and of a man, recently placed on exhibition in the American Museum. The picture shows that the bones of man and horse are strictly comparable, but man has retained more of the primitive or generalized features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth. The special structure and motions of the limbs are elucidated by the accompanying photographs of rearing and leaping horses. Figures were used by Prof. Osborn showing sections of the limbs, the various types of joints, the action of the muscles and tendons, of the ligaments and of the patella or knee-cap. The several parts of the limb in their capacity of levers must also be considered. The rate of oscillation of the upper arm and thigh bones when acting like a pendulum has been increased by the shortening of these bones, and they have become drawn up among the muscles. For purposes of locomotion, the movements of the horse's limbs are principally fore and aft, the muscles for drawing the limbs across the body and for rotating the arms having been lost during the course of increasing specialization. The photographic and mechanical analyses of the motions of animals made by Muybridge, many of which have been published in early numbers of the *Scientific American*, show the varied gaits of the horse in comparison with those of the raccoon, tiger, elephant, camel; and the mechanical superiority of the trot over other gaits must be admitted. The traditional representations by artists of the trot and gallop are usually wrong. A draft horse in the act of pushing against the collar of the harness, and thus of drawing a heavy load, causes the back-bone to curve some what at each thrust of either of the hind limbs, so as to bring the point of application of the force as near as possible to the midline of the body.

Most of the physical and mental traits of the horse are entirely useful. Usually each habit, each structure, must, as it were, pay its way, to give a definite return for the blood and food it receives from the organism as a whole. However, in human society there are individuals and institutions that have outgrown their usefulness, and although reduced in importance and destined to disappear ultimately, they still manage to "hang on." So too the horse retains traces of many former habits (e. g., a trace of the habit of brushing away the snow with its fore foot, so as to get at the grass underneath), and especially many vestiges in the skeleton. Among these may be mentioned the vestigial bony elements in the pelvis and shoulder girdle, in the wrist and ankle joints, and the famous "splint" bones back of the cannon bone, which are the vestiges of inner and outer toes. Sometimes organs which have entirely disappeared from the normal individual occur sporadically as "reversions." Thus the splints mentioned above very rarely appear as well-developed side toes, the foot



SKELETON OF A MAN AND A HORSE.

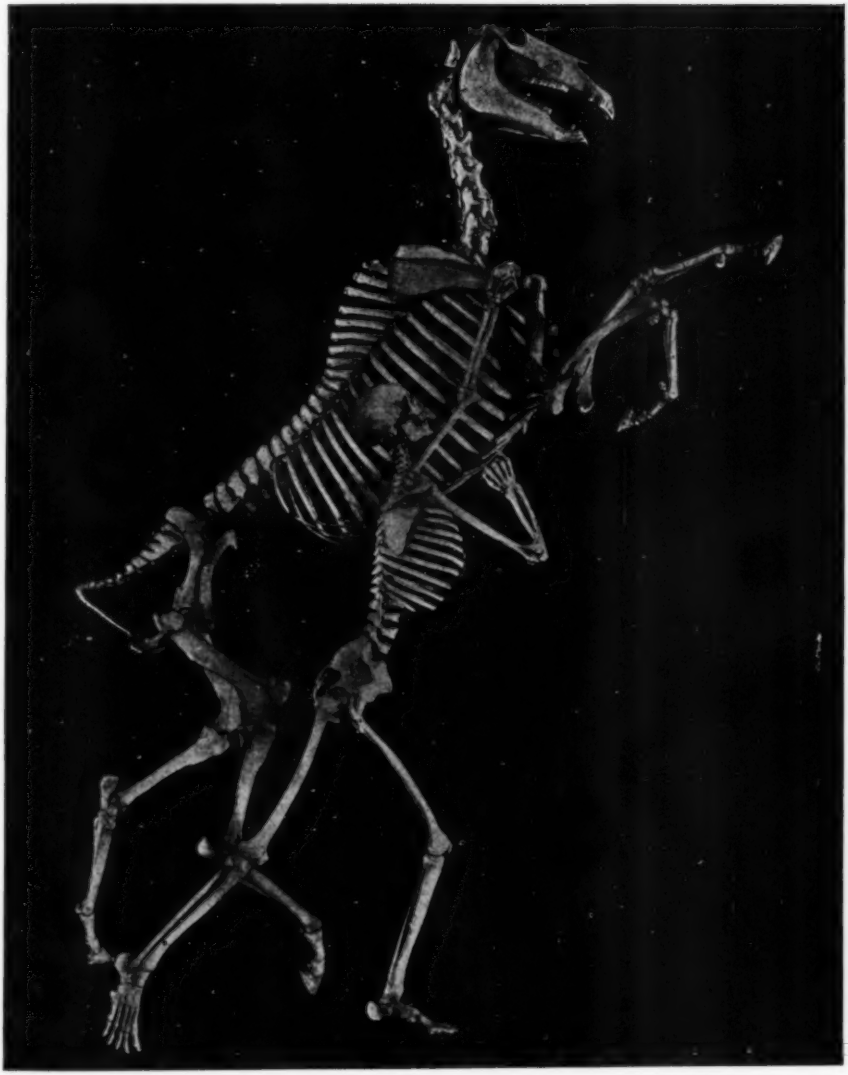
Mounted for comparison. Man has retained more of the primitive features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth.

ground. As a traveler it has acquired varied limb action and gaits, and also varied experiences, which have served to increase its resourcefulness and intelligence. Not being defended by horns or tusks, it uses its hoofs collectively as a weapon, which is particularly powerful and effective, the young being frequently defended from wolves by a ring of desperate hoofs. Since the chief enemies of the horse are the larger carnivores, it has developed quickness of sense and movement, and the young must be able to run with the herd at birth.

It is true that the horse is a complex "machine"; but it is more. No mere machine is self-perpetuating, no machine becomes perfected through long-continued use.

One of our photographs represents a beautifully mounted group consisting of a skeleton of a horse rearing and of a man, recently placed on exhibition in the American Museum. The picture shows that the bones of man and horse are strictly comparable, but man has retained more of the primitive or generalized features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth. The special structure and motions of the limbs are elucidated by the accompanying photographs of rearing and leaping horses. Figures were used by Prof. Osborn showing sections of the limbs, the various types of joints, the action of the muscles and tendons, of the ligaments and of the patella or knee-cap. The several parts of the limb in their capacity of levers must also be considered. The rate of oscillation of the upper arm and thigh bones when acting like a pendulum has been increased by the shortening of these bones, and they have become drawn up among the muscles. For purposes of locomotion, the movements of the horse's limbs are principally fore and aft, the muscles for drawing the limbs across the body and for rotating the arms having been lost during the course of increasing specialization. The photographic and mechanical analyses of the motions of animals made by Muybridge, many of which have been published in early numbers of the *Scientific American*, show the varied gaits of the horse in comparison with those of the racccon, tiger, elephant, camel; and the mechanical superiority of the trot over other gaits must be admitted. The traditional representations by artists of the trot and gallop are usually wrong. A draft horse in the act of pushing against the collar of the harness, and thus of drawing a heavy load, causes the back-bone to curve some what at each thrust of either of the hind limbs, so as to bring the point of application of the force as near as possible to the midline of the body.

Most of the physical and mental traits of the horse are entirely useful. Usually each habit, each structure, must, as it were, pay its way, to give a definite return for the blood and food it receives from the organism as a whole. However, in human society there are individuals and institutions that have outgrown their usefulness, and although reduced in importance and destined to disappear ultimately, they still manage to "hang on." So too the horse retains traces of many former habits (e. g., a trace of the habit of brushing away the snow with its fore foot, so as to get at the grass underneath), and especially many vestiges in the skeleton. Among these may be mentioned the vestigial bony elements in the pelvis and shoulder girdle, in the wrist and ankle joints, and the famous "splint" bones back of the cannon bone, which are the vestiges of inner and outer toes. Sometimes organs which have entirely disappeared from the normal individual occur sporadically as "reversions." Thus the splints mentioned above very rarely appear as well-developed side toes, the foot

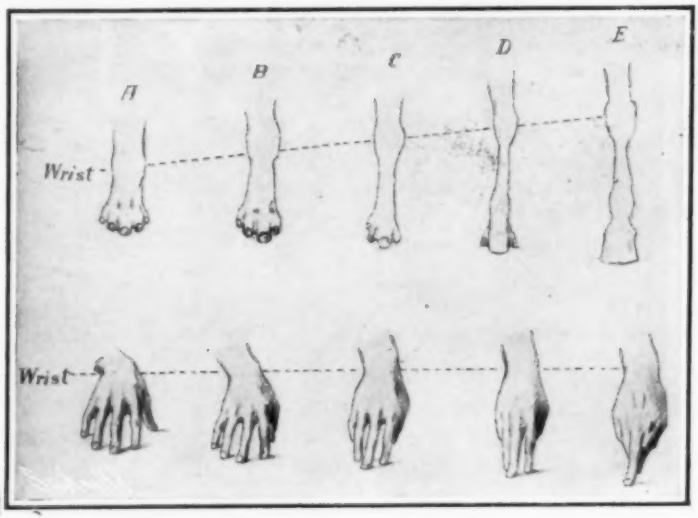


SKELETON OF A MAN AND A HORSE.

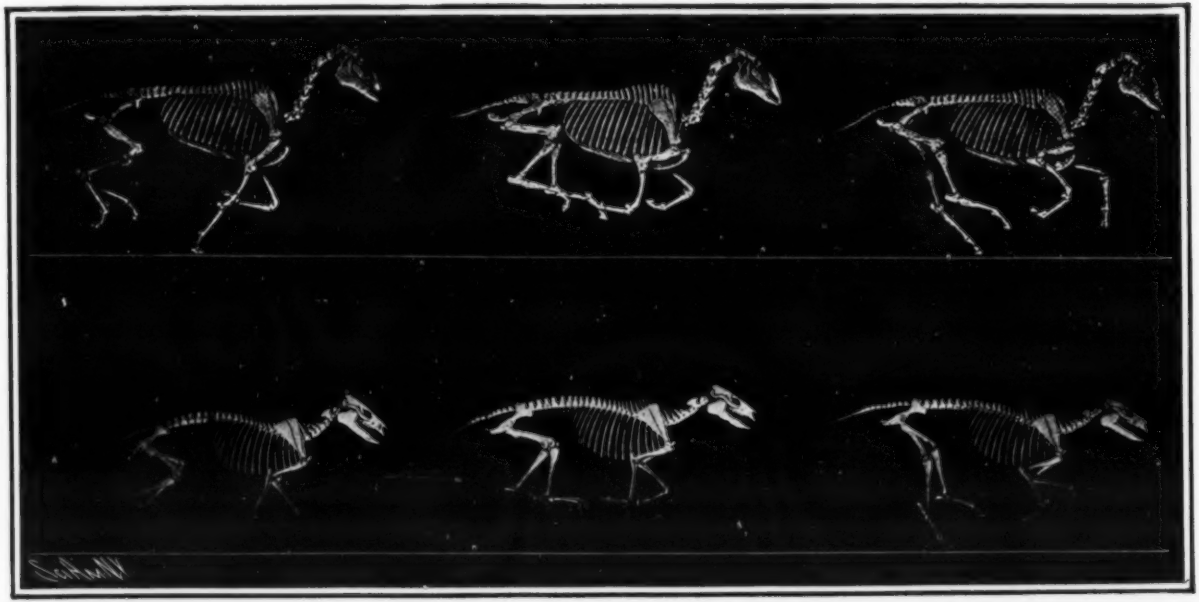
Mounted for comparison. Man has retained more of the primitive features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth.

of such a "freak" horse closely resembling that of one of the ancestral three-toed horses of the Tertiary period.

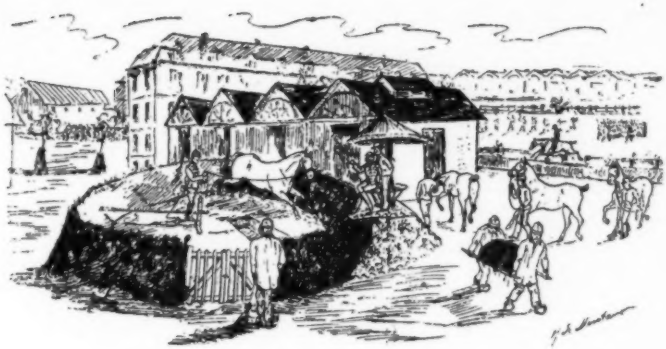
Many of the fossil skeletons now regarded as representing ancient equines were not recognized as such by their discoverers, on account of their very obvious differences from modern horses. For example, the great French naturalist Cuvier (1783–1844) who described the three-toed *Anchitherium*, recognized its horselike characters, but as he did not believe in the evolution or change of species, he naturally did not regard it as an ancestral equine. Other French naturalists described a number of other species with similar results. In England the great comparative anatomist, Sir Richard Owen, had the good fortune in 1839, 1842, 1857, to discover in rocks of Eocene age the fossil remains of what is now regarded as one of the most ancient and



primitive horses known (the term horse being used here in a very broad sense), namely, the little four-toed *Hyracotherium*. Darwin's great work on the "Origin of Species" (1859) set naturalists searching for "missing links" and ancestral forms, and so the French naturalist Gaudry, in 1865, fully recognized the equine affinity of the three-toed fossil genus *Hipparion* of Greece and the ancestral character of the horses of the Upper Eocene period. Finally, Huxley predicted in 1870 that the horse and all other hoofed mammals would be traced back ultimately to a form with five toes on each foot, and both Kowelevsky and our compatriot Cope prophesied that this generalized form would have bunodont, or low-crowned, grinding teeth. Finally, the discoveries of Leidy, Cope, and Marsh (of Yale) in this country first made clear in a general way the successive steps of equine evolution, and furnished Darwin and Huxley with a celebrated instance of evolution as indicated by fossil history.



Evolutional changes involve either, (1) the remodeling of old parts, as in the evolution of the grinding teeth; (2) the reduction of certain parts and enlargement of others, as in the loss of inner and outer toes and the great enlargement of the middle toe; (3) the coalescence or fusion of parts, as in the case of certain wrist bones and the fusion of the two forearm bones (ulna and radius); (4) the addition of new parts, as for example the great increase in the total number of cusps in the premolar grinding teeth. Thus "evolution" does not imply a uniform advance of all organs. If some develop, other degenerate. In the feet, the outer and inner toes (like Peter) were "robbed to pay Paul" (the main middle toe). Sometimes we seem to have evidence that evolution has taken place in a definite or determinate direction, as if, for example, the final complex pattern of the horse's grinding teeth were the goal toward which the trend of evolution had been aimed from the first. In fact, as shown by a series of photographs, all the elements of the complex later teeth are present, as it were, "in embryo," in the crown of the molars of the ancestral *Protorohippus*, the grinding teeth being low-crowned and their crowns with low tubercules, instead of the elaborately folded crests of later types. Hence, all the earliest hoofed animals retain this condition more or less fully, and among early horses the famous *Protorohippus*, the virtual founder of the horse dynasty, makes the nearest approach to it. A number of illustrations published some time ago in these columns represent the skeleton, the foot structure, teeth, and probable appearance in the flesh of this fascinating little creature, which was actually smaller than the head of one of its modern representatives. The *Protorohippus* had already lost by reduction the inner or first, and the outer or fifth toe in the hind foot, and most of the inner or first toe in the fore foot. This process of reduction was demonstrated to have gone on until in the final stage of evolution but one great toe, the middle of each foot, remained. The reason for this change is quite apparent. The horse family has made speed the keynote of its evolution; it had elected, as it were, to run instead of to hide, to seek for food over a wide area. One factor of speed is length of limb; wherefore the "horse" rose up on its toes, and the toes began to elongate. The first effect of this was to lift the shorter toes, Nos. I and V, clear of the ground, and being no longer useful in supporting weight, they speedily dwindled and vanished. Meanwhile the middle digit had to bear more and more weight, and hence it grew larger. The process of getting up on tiptoes being continued, Nos. II and IV followed Nos. IV and V, until finally only No. III, the middle toe, remained, with vestiges of I and V.



LONGEING AND TRAINING AT OBSTACLES.*

By Count Raoul de Gontaut-Biron, Former Riding Master at Saumur.

Translated for the Second Division, General Staff, United States Army.
By Captain CECIL STEWART, Fourth U. S. Cavalry.

CHAPTER VII.

Outline of a Method Combining the Advantages and Avoiding the Inconveniences of the Preceding Methods.

From all that goes before the necessity is evident of having a method, combining the advantages and avoiding as far as possible the disadvantages of the preceding methods

Training on the longe, without being necessarily carried on within the restricted limits of an open riding-school or of a riding hall, and the horse being riderless—such is the method to which we have been brought in order to make a high jumper in a very short time. The only trouble we have found with it is that horses, while quite able to jump safely at a pace much more rapid than by employing the other methods, reach with difficulty the speed which the chute allows. (This is why we consider this last means, the chute, as a very advantageous complement of training, especially for the racer.) Then this method requires application by a man acquainted with the use of the longe, if it is desired, within a relatively short space of time, to arrive at results such as could not be obtained by employing the preceding methods.

At the very start we banish constraint, and consequently condemn training done only with the horse with rider.

We shall show our reasons: the end we purpose is to train a horse at obstacles in the least possible time. On the other hand a horse is accounted trained when he is *willing* and *skilful*, and *jumps without tiring himself;* the first of these qualities is not obtained unless the other two conditions are fulfilled.

Freedom in play of head and neck during the different phases of jumping is an essential condition for obtaining skill and preventing fatigue.

*Continued from July number of the Journal.

As to skill, it allows the horse when taking off, not only to examine unembarrassed the ground over which he must jump, as well as the nature of the obstacle, but also to calculate without restraint the spot where he should spring. It is also necessary when the animal is about to land; for head and neck constitute a genuine balancing pole, indispensable to him in order to avoid mistakes and to retain what is called his "balance."

It is understood, therefore, how much, at this moment, all useless pull on the reins becomes prejudicial; first it gives this balancing pole a false position (whence, falls, blows, sprains, etc.), and next it prevents the horse seeing and avoiding inequalities of the ground on which he is going to land, which leads to the same troubles.

Concerning the ways and means of preventing fatigue, we have sufficiently enlarged upon the rôle of head and neck, not to need to return to it.

We can, then, to sum up, conclude, that to train a horse at obstacles, to make him willing, is to teach him to make use of his head and neck.*

Now, starting with this principle, that a horse enjoying excellent conformation for obstacles, perfectly trained and ridden by a skilful horseman, and for the stronger reason that a defective horse, not trained, and ridden by an ordinary horseman, will never succeed in using his head and neck with the same ease as if at large, we are forced to conclude that it is by training on the longe, the horse riderless, that we must begin.

It is by this training that there will be inculcated in the horse the habit of using properly his head and neck in jumping. And after the instructor shall have dwelt upon this exercise, more or less, according to need, the animal will so feel the necessity of their employment, that if when ridden he experiences hindrance from the rider's hands, often quite involuntary, he will seek instinctively to get the mastery, in order to regain free play of head and neck.†

This fact admitted, that the horse must be trained while granting him the greatest freedom possible, we have chosen training on the longe, the horse being without a rider. But we shall not on that account confine ourselves to the limits of an outdoor enclosure or a riding hall; therein is one of the great advantages of our method, which is thus within reach of those who have no chute or circular enclosure at their disposition, and moreover facilitates training in the open over natural obstacles; for, during the course of training, the horse never being guided by the barriers of the chute or the slope that surrounds the circular track, gets so accustomed to obedience on the longe over artificial obstacles, that afterward the instructor bringing him up to an obstacle in the open, he jumps without any hesitation. Furthermore, our method, as we shall see further on, permits of making jumps on the longe over great heights as well as considerable distances (five meters for example), a result impossible to obtain in the restricted limits of a circular enclosure.

Finally, the longe is the only means that makes it easy for the

*One of our instructors and friends, a very competent horseman, Major de Sesmaisons, generalizing the matter, and inspired with the ideas of Major Dutilh, whose disciple he is, like myself, says with much judgment, "That to ride a horse well is to know how to make the most of his neck."

†Horses with tender mouths, or that have been ridden by a rider with bad hands, and especially those that have been made jump with a rider before being otherwise trained, make up their minds with difficulty to use their head and neck in jumping. With these horses, one must persist with patience until they regain confidence and begin to extend the head and neck.

instructor to obtain from the riderless horse, not only the gait that he judges suitable, but also the degree of speed in the gait.

Before beginning the analytical study of our method, we believe we ought to warn the reader against two capital faults that he will often meet with, not to say always, in the horse during training, and that it is important to anticipate and immediately combat, when they show themselves.

First.—The horse shows a pause before jumping.

Second.—The horse does not jump squarely.

First.—*The Horse Shows a Pause Before Jumping* —The horse committing this error thereby loses a part of his dash and deprives himself of one of his principal means of executing the jump. For lack of enough dash, he must make a muscular effort considerably greater, and give greater scope to the movements of head and neck.

Now, the greater the muscular effort the more the jump tires the horse. The more pronounced the movement of the head and neck, the more ticklish for the rider is the execution of the jump.

However, if it is a question of a high jump, the horse that has the fault of showing a pause will jump under very unfavorable conditions but will nevertheless be able to accomplish his task; he will not be able, on the contrary, if it is a question of a long jump. In fact, we have determined that a horse, jumping one meter in height, easily covered four meters in width, and that the same horse, when he showed a pause before a ditch, with difficulty succeeded in safely jumping 2 meters to 2 m, 50 in width. This result proves that the void of the wide obstacle produces on the untrained horse apprehension that naturally makes him show a pause. Therefore, if to this pause, produced by apprehension which the void of the obstacle causes, is yet added that which the animal would have gained the habit of showing before high obstacles (a habit that would be retained before obstacles of another kind), the horse would no longer be able to jump as far in width as was cleared in the high jump of one meter.

The horse easily succeeding in jumping one meter high, one would be tempted to believe that it is easy for him to clear four meters in width, since he does it when he jumps one meter high. Experiment has proved to us the contrary. The horse does not jump safely four meters in width until after more or less prolonged exercise. It is true that the real meter must not be confounded with the imaginary meter of some huntsmen, who pretend to jump very often solid 1 m. 20-fences or five -meter ditches. After discussion we have sometimes gone and measured these fences and ditches; we have most often established for the one 0 m. 60 and 0 m. 70 and for the other two meters to 2 m. 50; which is already respectable, if these objects are frequent.

It is important at the outset of training energetically to combat pausing in jumping, and in order to do this gaits must be varied during training, employing gallop, trot and walk together. It will even be preferable to begin with the gallop, not making the animal jump at the walk (the gait at which pausing is most easily produced) unless he jump straight and show no pausing at the other gaits.

There would be temptation to insist, especially in beginning, upon the walk for gait, being that at which the horse learns best to use his head and neck (the principal aim of our work). But if one will observe that by jumping at the walk the horse always springs near the obstacle, one will see the trouble arising from this habit, which he will keep at all gaits and which perforce would bring on a pausing

all the more harmful as the gait was more rapid or the obstacle more serious.

It is of moment from the start of training to see that the horse takes off well at the place intended, that is for a high jump so much the farther as the obstacle is raised and the pace more rapid; for a long jump, as near as possible to the edge of the obstacle for the horse that must leap a three-meter ditch for example, if he spring two meters in front of this ditch, has evidently to make a jump five meters wide.

The habit the animal would have of making his take-off too near the obstacle for the high jump, besides the drawback of causing him to pause or to interrupt his gait, would have that of being very hard to destroy. That of making his take-off too far away, easier to eradicate, has the great drawback of obliging the horse to employ much more muscular strength in order to jump than if he sprang at the place intended.

It is seen then that the horse that jumps well must calculate his strides, so as to be neither too near nor too far from the obstacle, at the moment he springs; and this, without having to cut abruptly short his last stride, which would break up his gait and lead him to jump too near.

This calculation which the horse has to make will be easy at the trot, a gait at which the strides are not very great and may easily be shortened. But at the gallop, where the strides are long, it is necessary that the animal judge *from afar* the distance that separates him from the obstacle, in order to be able to regulate his strides so as to make his take-off at the intended spot.

It is understood then how necessary it is that, several strides before jumping, the horse arrives straight at the obstacle and be able freely to use his head and neck; how much also he must be exercised, in order to succeed in estimating with correctness the place where he must spring.

Second.—*The Horse Does not Jump Squarely.*—In order that the habit be not acquired at the walk it is necessary to combat the tendency the horse would have not to jump straight, when he is made to clear obstacles on the longe.

Many horses jump squarely, although they have been exercised at obstacles by means of longeing, because this work has been little insisted upon. But we, for whom willingness in the horse is but part of the end to be attained, have need of greatly prolonging longeing, and we would often meet with this fault if we were not careful.

Now this habit is very bad; the horse that has contracted it hinders horses jumping alongside him, and may occasion accidents.

Moreover, over a double obstacle, the horse that has not jumped the first obstacle squarely, naturally finds himself outside of the second, when the width of the obstacles is small, without having had the least intention of avoiding.

Finally, the horse, that during a long period of longeing has acquired the habit of not jumping squarely, most frequently commits this fault when showing a pause.

In fact he commences by coming straight at the obstacle, but too near; and it is when he has come too near that he places himself aslant for the jump, which movement he could not make without pausing, above all if his gait is fast or the obstacle serious. The pause is one more serious difficulty to add to the foregoing.

At first thought, one would be tempted to believe that the horse

in jumping on the longe on the ring to the left, for example, is prompted to jump crookedly by obliquing to the left. That is what would happen if he had not the following reason to do the opposite. The horse jumping at the end of a longe is prompted in jumping, to throw his shoulders outward from the ring, because he shuns the whip which the instructor is often obliged to use to avoid the pausing (especially over the wide obstacle) and which he does not always succeed in concealing from the animal.

If this fault is not combated from the start in training the horse will always keep the habit of not jumping squarely, even when ridden and brought straight up to the obstacle, be the obstacle low or high, the gait slow or increased.

This much said, before setting forth our method, we still owe the reader a few observations.

Training over obstacles will be all the better understood the more the horse is tractable on the longe.

It will be advantageous to begin training with the wide jump, and that for two reasons:

First, the wide obstacle is that which is most often met with in our country.

Next, this obstacle produces on the horse an impression that induces him, when he is not trained, to show pausing. And we have seen that if this fault leads in high jumping to a defective and difficult jump, but one nevertheless possible, on the contrary, when it comes to wide jumping, the same fault prevents the horse entirely from jumping, and paralyzes him to the point of not being able, in spite of considerable muscular effort, to clear more than two meters to 2 m.50 in width.

Now if one will but consider that in the high jump, unless it be executed at a full gallop, even the trained horse shows a pause, very slight it is true, but sure nevertheless, it will be understood, if the high obstacle is dwelt upon at the start of training that there is risk of giving the horse the habit of pausing; it will afterward be hard to cause this habit to be given up when the question is the wide jump, which will become through this even impossible of execution.

It is therefore better to begin by habituating the animal to jump an obstacle at which the instructor should always seek to have the last strides hastened and *especially the last.*

However, to begin training, a bar will be used, placed first on the ground, then raised a trifle; this not so much to cause the horse to jump as to become absolutely his master, while making him go perfectly straight and quietly, as when longed without obstacles.

The bar on the ground, or nearly on the ground, does not present the drawback of a higher object, over which the instructor might have some trouble in preventing the horse from avoiding, stopping or showing a pause. It replaces to advantage, as far as concerns imparting docility, a ditch of very slight width, so placed as not to hinder the instructor's movements and which is not always at hand.

Because of the slight trouble the animal will have in passing over the bar on the ground, the instructor will quickly succeed in obtaining complete submission. *He should, moreover, attach great importance to this lesson, and not lose from sight that the animal that is obedient in it can be considered as almost broken.*

Indeed, if the instructor is careful to go from the simple to the complicated, that is to say to increase the obstacle by an amount

scarcely noticeable, he will be obeyed, without encountering the least resistance, each time that, satisfied with the horse's work, he should wish to ask for a more considerable effort. We also lay down for the instructor never to end the first lessons without coming back to the bar on the ground. He should even revert to it during the course of the session, if the animal, consequent to too great requirements, or for any other cause, happened to show dislike in his work.

In the beginning, it will often happen that the horse touches the bar and will become excited and try to knock it over.

There is no need to be alarmed; the frequent light blows that the animal gives himself will quickly teach him, often from the very day, sometimes only the day after, not to strike the obstacle hard enough to knock it over, if movable, or to fall himself, if the obstacle is fixed. The inflammation of the knees that might result from these blows will generally disappear of itself after some days, and in any case will not withstand a few douches or a little rubbing. This inflammation must not be confounded with that often seen in the knees of race-horses, that receive violent blows at fast gaits, and that occasionally preserve the marks of them during their lifetime.

We shall add to all these remarks that the business of subinstructor, simple enough in longeing, becomes more delicate in training at obstacles. This assistant should be intelligent enough to understand, quickly and well, orders that he will receive from the instructor.

Outline of the Method of Training at Obstacles.

How to give the lesson.

The bar being on the ground, by way of exception the work will begin at the walk and the subinstructor will hold the longe. He will let the horse have two or three meters play, and will walk boldly, moving straight at the bar, over which he will pass, followed by the animal.

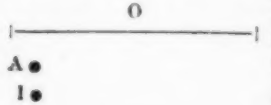


Figure 30.

O, obstacle I, instructeur. A, aide

The instructor on his part, will follow the horse and will so act *that he does not in the least slacken his pace*, at the moment of crossing the bar; for this he will urge him with the long whip, if necessary.

The bar passed, the walk will be continued for some paces straight ahead, an about will be made without halting, and the bar will be passed in the contrary direction and under the same conditions. Instructor and assistant will then resume the place assigned them in longeing and without to any great extent worrying about the pace aken by the animal, they will put him on a circle with a relatively small radius. and laid out so that the bar comes on the circumference. The circle will next be enlarged when satisfied that the horse has no desire to avoid, and the instructor will make him exercise on it at the gallop, then the trot and walk.

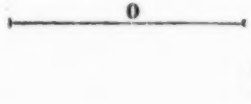


Figure 31.

In this exercise and especially during the whole course of training, in measure as the difficulties increase, the instructor will be careful to place himself on the side where the horse comes up to jump and all the more behind the obstacle as the latter is higher or wider and as the horse has more tendency to show a pause. The instructor lets the end of the longe not in use drag on the ground or has it held by the assistant. The latter, always at the instructor's orders, takes his stand either between him and the obstacle, and the nearer to the obstacle the more that the horse tends to avoid or to jump askew within the circle (*Fig.* 30), or at the other end of the obstacle with reference to the instructor, if the horse tends to jump askew outside the circle (*Fig.* 31), or quite in rear of the obstacle to urge the horse before making the jump (*Fig.* 32).

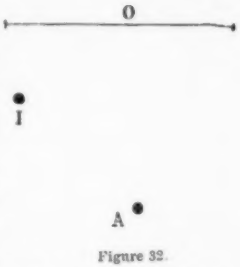
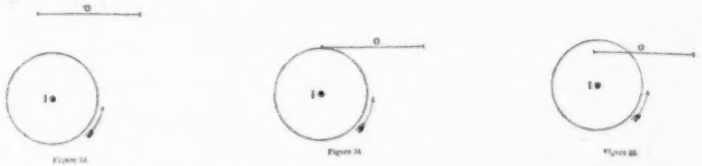
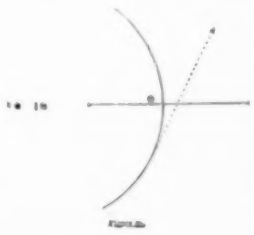


Figure 32.

The instructor's place should be such, that, if the horse described an exact circle about him, this circle, or more correctly this circumference, should either pass between him and the obstacle (*Fig.* 33), or be tangent to the obstacle (*Fig.* 34), or finally cut it so that the greater part of the circumference be always on the side from which



the obstacle must be approached (*Fig.* 35.) In fact, the horse, after having been put at this exercise for some moments, no longer describes an exact arc about the instructor; for, already accustomed to cross the bar, he tends to take the original direction to go up to it, from the moment it is noticed; moreover, the whip, which the instructor is often obliged to use, and which, in spite of all his efforts, he does not succeed in hiding from the horse, frightens the latter, makes him bear away, and in this very way places him at right angles to the obstacle. If the instructor made use of the whip, taking his stand on the prolongation of the obstacle, he would act upon the horse only at the very instant of jumping, instead of being able to urge him from behind several steps before the obstacle; further, how try to hide the whip from the animal, that from this time on would be frightened and would perforce jump askew outside the circle (*Fig.* 36)?



To sum up, the instructor, when causing a quite small obstacle to be jumped, a bar on the ground for example, should take his stand on the side on which the horse comes up to jump the obstacle, in such way that, if the horse describe an exact circle around the instructor, this circle may cut the bar, the greater part

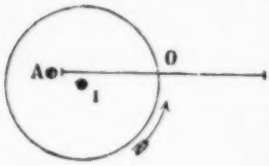


Figure 37.

being on this side and the lesser part on the far side (*Fig.* 37).

On the contrary, when it concerns a very high or wide obstacle, a five-meter water jump for instance requiring a rapid gait, the instructor should place himself on the side of the horse's approach for the jump and quite far in rear of the obstacle, so that if he made the animal trace an exact circle about him and having the ordinary radius in this exercise, this circle would be far from the obstacle (often even very far) (*Fig.* 38).

In this case, the point where the horse quits his regular circle to direct himself perpendicularly to the obstacle, may easily be distant twenty meters from the obstacle. Of course the horse does not from the very start succeed in getting the habit of moving straight at a big obstacle and at so great a distance from the latter without trying to avoid; this obedience is easily obtained when it is first asked over a very small obstacle, whose importance is increased as the animal progresses. When it is a matter of a serious obstacle and the horse, describing his circle about the instructor, finds himself at the place where he quits this regular circle to go perpendicularly to the obstacle, the instructor may step forward one or two paces parallel to the obstacle and toward the horse; he in that way stands entirely behind the horse and in an excellent position to follow him and touch him up with the long whip. The latter cannot make him jump askew, since it acts right behind him.

As the horse should not be hindered in any way in his jump, it is necessary, especially for obstacles of great importance, that the instructor make use of a very light longe, free from knots which would prevent allowing it to run easily through the hand*.

So then, for the reasons we have just outlined, the horse does not trace an exact circle about the instructor and so gains the habit of moving straight at the obstacle from the time he perceives it.

If he appeared ordinarily to want to jump crookedly, the assistant should straighten him out again by standing on the side toward which the horse tends to jump askew, so as to drive him toward the opposite side, taking, if need be, a more or less threatening attitude. The instructor would experience great difficulty if, wishing himself to correct the horse that jumps askew away from the circle, he sought to bring him back toward the interior of the circle by a pull on the longe at the moment of jumping; by means of the assistant, the fault is very easily corrected.

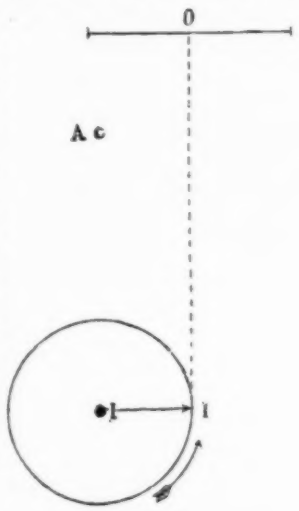


Figure 38.

*The instructor should, for that purpose, provide himself with heavy gloves to save his hands.

Jumping obstacles on the longe should be done to both hands, so as to avoid having the horse gain the habit of jumping askew from one side only, to the right for instance, if he was exercised only to the left hand.

These remarks, or rather this long digression, made, and therefore the instructor well knowing how he should act in all cases that will present themselves, let us return to our training.

Exercising the horse over the bar on the ground will be continued until he no longer shows any fear. Moreover, it will be easy to take account of this if he is seen to pass the bar at gallop, trot and walk without pause, and if, at the walk, he walks before and after the obstacle with head nodding, as a horse would do walking carelessly at liberty; in a word, if the animal is seen to be just as manageable as if he were working on the longe without any obstacle.

If the animal persists in bolting over the bar or jumping it, which frequently happens, the instructor will decrease the circle, stop the horse immediately after his jump, make him change hands,* as laid down in longeing, start him forward again by a click of the tongue, make him recross the bar, stop him again, and thus continue, permitting the animal to walk as little as possible on each side of the obstacle and forbidding his showing any pause. Fear having completely disappeared, the instructor, instead of stopping the horse directly after the bar, lets him walk some steps, makes him change hands, recross the bar, walk a few steps more, and so on, increasing more or less the distance from the bar at the about, according as the horse is more or less quiet.

The exercise will be continued until the horse describes the complete circuit of the circle several times, without increasing his pace and particularly without decreasing it.

The animal will next be put at the same exercise while enlarging the radius of the circle, which in the course of training should be longer as the horse is more obedient, the pace more rapid and the obstacle more serious.

The bar will next be raised progressively up to about fifty centimeters, being careful not to fasten it, so as not to disgust the horse by a fall, which might cause an accident that the animal would always remember.

We prefer movable obstacles during the early training; for it is beneficial for the horse to gain confidence and not to hurt himself in jumping; afterward we use fixed obstacles, when the horse has been fully instructed in the way to go about jumping them; for if he fall, he can take account of the mistake he has committed.

In order to have a sufficiently mobile obstacle, without however being too much so, the position of the posts at the ends of the bar is reversed, so that, no matter on which side the horse comes up, there is always one end of the bar in front of one post and one end behind the other. In this way the bar will never be immovable, without however being too easily displaced (*Fig.* 39).

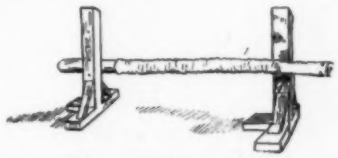


Figure 39.—Posts and bar.

The horse will be drilled as much as possible in following consecutive gaits; the instructor

*When the instructor makes a change of hands he is careful also to change the center of the circle described by the horse, so as to take his proper place with reference to the obstacle he wishes to have jumped.

should attach the greatest importance to the exercise at the gallop being perfectly executed* before passing to exercise at the trot and walk, in order not to let the horse get the habit of springing near the obstacle.

So then, if during the course of the lesson the horse should show some hesitation in jumping the bar at the gallop, there must be no hesitation in decreasing the height of the obstacle and even in returning to the bar on the ground. The animal must hasten the two or three strides just before the bar, but after having jumped, must retake the gait at which he was going.

When the horse is perfectly tractable over the bar at fifty centimeters, the cavesson is taken off and he is ridden by a trained trooper.† The latter will be careful to keep on the circle; he will pass over the bar on the ground following progressive gaits.‡ He should, of course, know enough to let the horse have free use of his head and neck.

When the animal passes the bar without jumping, the trooper will be directed to enlarge the circle so as to come straight up to the bar.

The trooper will be careful to change hands often, either near or far from the obstacle, and should demand from his mount the same calmness as if it were on the longe, calmness that the horse will readily acquire if he is not hindered in his movements by a too heavy hand or a too sensitive mouth.

When the trooper, riding a horse having a tendency to bolt over an obstacle, passes from a slow to a rapid gait, he should do so without suddenness and before changing hands; for, if this passage from one gait to another always came after the about, the horse might think that because he is in front of an obstacle he must change gait, and consequently might become too eager at obstacles. If, on the other hand, riding an eager horse, the trooper passes from a rapid to a slow pace, he ought to do so after changing hands, the horse of this temperament always having a tendency to rush at obstacles. It would not be necessary, however, under pretense of avoiding the too eager horse, to fall into the opposite error and reach an obstacle with a horse lacking spirits. The horse ought always to have some go without for that matter bolting. But it is preferable, with a view to a well-executed jump, to have to urge the horse a little rather than to be obliged to hold him in much; in the latter case the animal is hindered and cannot execute his jump in a safe way.

The trooper ought now to quit the circle and describe figures of all kinds; in executing them he will pass over the bar whenever he meets it. He will dwell on weaving in and out,¶ which has the advantage of rocking the animal, that is to say, of causing him to lean now to the right, now to the left, and to accustom him thus to get feel of the rider's hand, which is necessary for good execution of the jump. These varied figures, during the execution of which the horse does not jump the obstacle, the many times he passes alongside or finds himself going toward it, make the animal very quiet, since

---

*The lesson will be then all the more easy to give as the horse is more tractable on the longe.

†When the progression of our method has been followed, step by step, it is needless to make horses jump with a rider and held on the longe; we advise, however, this method of action with bad-tempered horses that have remained long obstinate at obstacles.

‡So long as the bar is slightly raised, it would be better to begin with the trot than with the gallop, the horse being more easily handled at this first gait. This precaution will render more easy the work on the circle and the perpetual changes of hands necessary to quiet the animal.

¶(Serpentines.)

he does not expect to jump each time he finds himself near the obstacle.

The preceding exercise will be repeated, the bar being progressively raised up to about fifty centimeters and requiring the horse not to increase his pace after the jump. If he increases it, he will be quieted by means of contracting the figures that he is made to describe, and following this by repeating the jump.

Nevertheless, as beforehand, no importance will be attached to the horse's hastening the two or three strides just before the bar, provided that after having jumped he retake the original gait.

In this exercise, the trooper who should fear to hinder his horse while jumping ought preferably to use the gallop; for it is known that the faster the gait, the less chance the rider has to hinder his horse. Moreover, if the hold of the reins that we have pointed out is made use of the trooper has no need to be much practiced in order not to hinder his horse in jumping and he will be able to permit himself more jumping at the walk, the gait at which the horse has most to learn.

After the preparatory exercise that precedes, the horse knows how to spring and is perfectly docile over obstacles. He may consequently be brought to the wide jump. for which great submissiveness on the animal's part is quite necessary, since the instructor, as we have said, is at times hindered a little in his movements.

He must have at his disposition a ditch one meter to 1m. 20 wide and so sloped as to avoid all chance of accidents, that would give rise to fear in the horse and not confidence which we seek to give him.

The exercise prescribed for the bar at fifty centimeters will be repeated with the longe, permitting the animal, as in that work, to hasten, if he wish, the strides preceding the obstacle, provided that he afterward retake the original gait at the instructor's indication. The latter should even insist quite particularly on having *the last stride, at the instant when the horse springs,* hurried. In fact, though the animal quicken a great number of strides before the obstacle, *he entirely loses, if he hold up on the last stride, the benefit resulting from his having hurried the preceding strides:* he is consequently unable to make a wide jump.

It is at this stage of training especially, that the instructor ought to prevent the animal from showing the least pause, even though it be to take account of the obstacle. For it is necessary to accustom the animal to judge rapidly, and without stopping in the least, the obstacle he must jump; this result can be completely obtained, since we only bring the horse up to obstacles that correspond with the experience which he has already acquired. This exercise should be gone through with using successively the three gaits and then all three together.

When the horse is well broken to it, he will be freed from the longe and ridden by the trooper, who will execute at trot and gallop the same work as for the bar raised to fifty centimeters and requiring the same calmness. The trooper should often, immediately after having cleared the obstacle, bring his horse to a walk, and drop the reins, so as to let the animal walk as if free. This practice will give a habit of calmness after an obstacle; the horse, having accelerated the last strides, might in fact take advantage of this acceleration to pull. The trooper will experience the good effects of this practice in the case where, feeling his horse hold up in the last strides before

jumping, he will have been obliged to spur him; indeed, thanks to this habit gained, he will be able to render himself master of the animal, as soon as the obstacle is passed.

Arrived at this point, the horse will be put again on the longe, and led into the open, where, put on the circle, he will easily jump and willingly cross natural obstacles. There need be no concern in making him negotiate more serious ones than those he has so far jumped; for he has always less apprehension about natural obstacles, and consequently clears them more easily and more skilfully.

In addition the difficulty of obstacles will be increased first in width, then in height when the horse makes the wide jump without showing the least pause.

The blind ditch is an obstacle at which the horse should very often be exercised Care must be taken that the animal gets the habit of rapidly judging this obstacle, so as not to show any pause that would make it impossible to clear the necessary width. To this end the instructor first exercises the horse over a ditch slightly concealed and narrow.

It is especially at this kind of obstacle that one will reap the benefits of the horses' having gained the habit of carrying forward his head and neck before withdrawing them upon the trunk, without which action he might pass over other obstacles if absolutely necessary, but would be unable safely to clear blind ditches; through the fact of the head being lowered and carried forward at the same time that the neck is extended he can take perfect cognizance of the obstacle (*Fig.* 40).

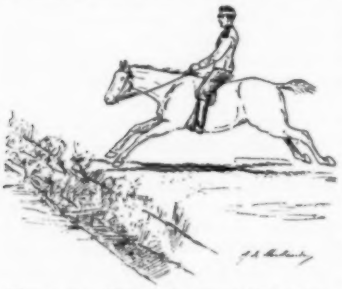


Figure 40.—Horse going over a blind ditch.

The horse, knowing how to jump on the longe ordinary obstacles met with in the field, will be given the same lesson, no longer held on the longe but ridden at gallop, trot, indeed even at a walk, if the trooper's skill and the nature of the obstacle permit; the instructor does not forget that the swifter the pace, the less the hand has a chance to hinder the animal.

In this instruction it will most often be useless to jump the same obstacle several times; the aim on the other hand is to vary impediments with which the horse will meet.

It is possible that the lesson at the blind ditch requires that the longe be insisted upon a little more before having the animal ridden; it is for the instructor to judge what he ought to do.

Having reached this point, the horse is considered trained for military service and may confidently be taken upon the drill grounds, to clear several times running, *while changing gaits or without quitting the gallop*, the obstacles that are generally arranged there.

He is also fit to jump safely the different obstacles met with in hunting, save however in regions, moreover very rare, that require the use of quite remarkable jumpers. Further we affirm that if the exercise has been well given, following scrupulously our procedure, three days, with two lessons of a half hour daily, will suffice to obtain this result. Our method has then for its end to make,

in a very short time, *a fully developed horse* fit to render service as a jumper, either as troop horse or hunter, and to prepare him perjectly for receiving the following lessons, which ought to make a high jumper out of him. But the application of this method requires deep study and is not within reach of the first come instructor.

When training a bunch of young horses, not only would it not be expedient, but also it would be prejudicial to push this instruction so rapidly, the horse not having gained his full strength. We believe, then, that in this case training at obstacles ought not to be the object of particular lessons, but on the contrary ought to be done at the same time as the training proper. We also believe that the young horse is the gainer by being made to follow it daily. This is the way we advise giving this lesson: after the horse without rider has been exercised, during several days, on the longe over obstacles placed for this object in a *circular riding enclosure*, he ought to be able to be ridden over other obstacles. The instructor then has a bar placed on the ground on the track followed and directs the troopers to dismount.

They, leading their horses by the head, take up the walk, one behind the other, the leader having a very willing horse and tracing a circle such that the bar comes on the circumference. The instructor is at the center of the circle and urges on the horses that hesitate. After some circuits the horses pass the bar without any fear. The instructor then has the horses mounted and continues the circling, first at the walk, then at the trot and gallop, having the circle enlarged according as the horses gain confidence and while charging the troopers to take more distance; he next has hands changed on the circle and the horses make several circuits at different gaits, then he orders them off, and from this time on the training proper continues as if the bar were no longer in the hall or enclosure, and this during a great part of the session. Each of the following days during a quarter of an hour, more or less, as the instructor judges proper, the bar may be raised ten centimeters and the training proper continued, as was done when there was no obstacle in the ring. A few days after, the obstacle may be again raised ten centimeters, and so on up to the regulation height, being careful to go quite slowly in increasing the height of the obstacle.

As to the ditch, it will be gone at in the same way, always keeping up the training work proper. The squad will be formed near by the ditch to be jumped and each trooper, when given the word, will move out, clear the ditch and then resume his place in the squad, being careful to come down to the walk after jumping, if the horse is too eager; the instructor again may order the troopers to jump the ditch whenever in the different movements ordered they find it across their track. As in the high jump, very little will be added to the importance of the obstacle, and preferably the narrowest ditch will be dwelt on. Note that, no matter what the obstacle, if the trooper is compelled to change the horse's gait in order to jump, he makes him retake the original gait immediately after jumping.

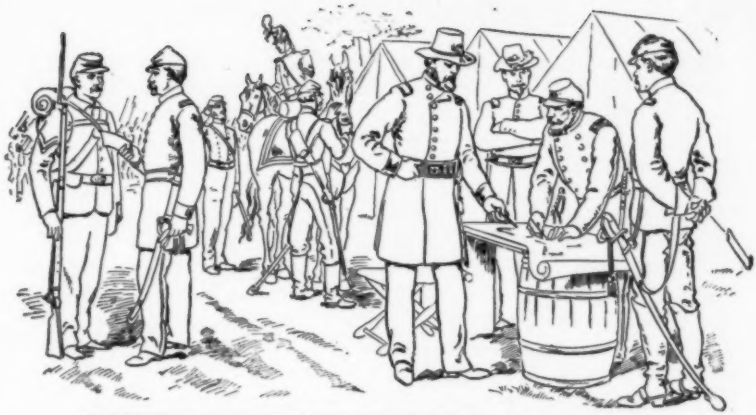
By this method, not only do horses develop their powers and learn to jump perfectly, but further they get the habit of invariably looking at the ground over which they are going and consequently become very skilful in varied ground. When the horses of the squad are judged willing and skilful, they may be taken, at the end

of the sessions, to the artificial obstacles of the drill ground, where they are drilled to jump either singly or by twos or by fours.

But the troopers should be warned that they are no longer required to keep the dress at some meters from the obstacle, *the horse requiring complete initiative in order to jump.* The alinement will be retaken when once the obstacle is passed

It is then that it will be advantageous to have recourse to training behind the hounds, provided it be practiced with wise limitations and without ever tiring the animal. This allowance of work would give back to a horse the spirits and keenness that an inexperienced instructor's mistakes might have deprived him of during training on the longe, always a matter of delicacy.

[TO BE CONTINUED.]



Comment and Criticism.

"Military Hygiene."

Colonel R. W. Leonard, late Twelfth N. Y. Volunteers.

Captain Traub in his recent excellent and valuable article entitled "Military Hygiene" quite reasonably, considering the reports current, ascribes the sickness in the camps in 1898 to camp pollution, and quotes from the then Secretary of War: "What was the cause? The answer is simple and easy of demonstration. Generally described, the cause of the sickness was camp pollution; specifically, the cause was due to ignorance or neglect on the part of officers, coupled with the inexperience of the newly enlisted soldiers." And again, "The evidence is overwhelming that the sickness among the soldiers encamped in the United States during the summer of 1898 was the result of ignorance, inexperience and carelessness on the part of officers and men.

"The fact that typhoid fever was prevalent in every camp, whether of 1000 or 50,000 men, indicates what other indisputable evidence conclusively demonstrates."

Very respectfully the writer begs leave to say that these assertions are founded on assumption.

The writer is quite familiar with all the phases of the camp at Chickamauga, having been in that camp from May 17th till August 25th, when it was thought possible that there might be some local reason for the prevalent fever, and the troops were hurried from this plague-stricken spot to places believed to be healthy.

One of the misleading comments on Chickamauga is that in 1863 it was the camping ground for more than 100,000 men who were not sick. That these 100,000 men were the survivals of the fittest, in-

ured to fatigue and exposure, and that they were "hard as nails" and not susceptible to disease, is not considered when contrasting conditions in 1898 with those in 1863.

In 1863 the men drank from the Chickamauga Creek and from the Tennessee River with impunity—the creek was used for every purpose —no water was too bad to use.

There were very few at that time who knew that drinking water should be boiled, and these few were not in the army.

In 1898, the water for drinking and cooking was brought in barrels from the Blue Spring and the Crawfish Spring, several miles distant, for several weeks, until pipes were laid and water brought from another source—the men were not allowed to drink from the creek nor from the wells on the reservation.

The troops first to arrive at Chickamauga went into camp in the open, and presently went to Tampa to join the forces intended for Santiago. These were succeeded by 50,000 militia from the various States. These new troops were encamped in the woods, leaving the open for drill purposes. The woodland allotted for camps was rocky; the soil, where there was any, varied from three to eighteen inches in depth, making it difficult to find a spot where it was possible to dig sinks. When it rained, these sinks, in soil impervious to water, filled, and the overflow followed the law of gravity, possibly toward the kitchens, possibly in other directions. Everyone was saying, "Of course, we shall not be here very long, no one would think of putting a camp in the woods, and on such ground, if we were going to stay any time." That the medical direction of this large camp should be at the mercy of a veterinary surgeon, who had just been made a lieutenant-colonel in the Medical Department was a sin that cannot be charged to any line officer.

That the typhoid spread so quickly in this camp was doubtless due to the myriads of flies that suddenly appeared, infesting sinks and kitchens. It has been asserted that these flies came in consequence of the filthy camps. In August these flies disappeared as suddenly as they had appeared. If unsanitary conditions brought the flies, what, then, drove them away?

The camps were all industriously policed; officers bought lime for disinfecting until it could be determined which bureau should issue it.

An officer on duty at Alexander Bridge was impelled by curiosity to go into a house by the bridge to see how the natives lived—a wretched-looking people with putty-colored complexions. A convalescent child first attracted attention. In reply to the question "What is the matter with the child?" the mother said, "Typhoid fever, and the other one had it just before this one."

The woman added the information that it was a great place for typhoid fever, and that they had it every year.

To show that the fever at Chickamauga was not due to ignorance, carelessness or any other cause under the control of the line officers it is proper to follow some of these regiments and observe their medical history. One brigade, which was at Chickamauga, went to Matanzas later. One regiment in this brigade that had lost fourteen men from fever contracted in Chickamauga had no sick while at Matanzas excepting venereal cases and feet cut by broken glass while bathing. One regiment, stationed singly at Mount Chanin, Del., had no sick to signify. This case goes to disprove the assertion that typhoid was prevalent in every camp whether of 1000 or 50,000 men.

All this amounts simply to saying that salubrious localities are more healthy than those that are insalubrious.

The troops that were at Santiago were horribly fever stricken; the troops stationed at Havana, Matanzas and Cardenas, were in perfect health.

The regiments that were sick in Chickamauga were free from sickness in Matanzas and Cardenas.

Much of the public opinion concerning the ignorance of the troops at Chickamauga is the result of the denunciation of the late General Boynton.

General Boynton was the president of the Chickamauga Park Association. In fact, he was the father of the park and was proud of his ugly duckling. In his eyes that piece of sterile ground was beautiful.

He could not see that it was simply an historic spot, of interest only to those who wished to study the battle, and that it should have been left exactly as it was in September, 1863.

The student finds this interesting ground cut up by roads apparently laid out for railway purposes. Where once was a hill, there is now a cutting; where there was once a valley, is now an embankment, and hundreds of sign boards bear the legend "In 1863, this road was without cuts or fills."

The general took it as a personal grievance that people should be so inconsiderate as to fall sick in this Garden of Eden (?).

So much for 1898. Let us turn to the Philippines and enquire into the cause of the sickness there.

The assertion is made that had it not been for the haste in organizing the twenty-five volunteer regiments in 1899, and had the enlistments been restricted to those who could meet Tripler's requirements, there would have been very few discharges for disability, excepting for wounds. The only disease that is strictly peculiar to service in the Philippines is nostalgia.

There was one regiment organizing in 1899 for service in the Philippines that refused 450 recruits who had passed the recruiting officers and the civilian medical examiners.

One lieutenant had been promised a captaincy if he recruited a certain number of men. Out of sixty-three of his recruits, fifty-eight were rejected. A Washington paper had a column condemning the unpatriotic conduct of the commanding officer in refusing to accept "men who wished to fight for their country."

These rejected recruits were alchoholics, sufferers from various disorders, feeble intellects and one had curvature of the spine.

A surgeon was sent from Washington to re-examine one batch of 116. The rejection was confirmed.

Note the result: All of these 450 rejected recruits were accepted in other regiments, such was the haste to complete recruiting and get out to the Philippines.

One colonel of volunteers in the Philippines said that he was practically ordered to accept forty of those rejected. When asked what became of them, he replied: "All discharged for disability incidental to the service."

Every man discharged under such circumstances is entitled to a pension for the rest of his life. The pensions paid to men improperly enlisted, added to the cost of enlisting, clothing, subsisting and transporting them to and from the Philippines amounts to a considerable sum in the aggregate, much of which was needless expense.

"Notes on Promotion."

Major W. P. Evans, Military Secretary.

In support of the various suggestions which have been offered by the advocates of promotion by selection the claim is made that such a system is needed for the army for actual service in time of war, and yet these advocates of a new system have utterly failed to propose any scheme that would be practically operative in time of war. The primary test to which every proposed scheme should be put is, will it work in time of war? If it fails to stand this test, further discussion of it is worse than useless whatever evil it may be designed to correct. The army is organized for war. War is its *raison d'être*. Any system of promotion will do for a time of peace. Any kind of army will answer when it is not confronted by an enemy.

If we apply the test to the suggestions of General Allen, the system which he advocates must fail. In time of war the army will have more absorbing work than that of picking out eligibles for promotion. The "third colonel," the "fifth lieutenant colonel" and the "ninth major" will be needed for more serious duty than that of sitting on a promotion board. They will be needed to give practical illustrations of their own fitness to command men. The still larger general board which is suggested by the author as an alternative

will be still more impossible in time of war. It must be composed of officers of distinction if its opinions and recommendations are to have any weight. How shall we get such a board together when we are in the face of an enterprising enemy? Such officers will have a graver responsibility on their shoulders than that of balancing the military virtues and vices of those who seek personal advancement; and so this scheme fails because it will not stand the test, the only one which is a proper test of the measure of its value. The recommendations for promotion which would be made by any board which could be gotten together for such a purpose in time of war would not be worth the paper on which they might be written.

Already we have too many innovations which have not stood the test of war. Far be it from me to suggest, as an instance, that the general staff would not stand the test—that its array of talent would fall away in time of war, seeking the command of troops, but there are many scoffing unbelievers in the service who will not believe, until they see a successful test, that the organization will stand the stress of war. If, indeed, it should successfully stand the test and remain in existence as a general staff, as now constituted, the army would miss some very efficient material for the making of regimental and brigade commanders.

If any system of promotion by selection can be devised which could be successfully operated by army boards in time of war, let us hear of it. If none such can be devised, let us confine the question to the consideration of what will be the merits of the system when operated wholly by the civilian appointing power.

"The U. S. Magazine Rifle, Model 1903."

Lieutenant Morton C. Mumma, Second U. S. Cavalry.

Referring to the most excellent article on "The U. S. Magazine Rifle, Model 1903," by Major W. C. Brown, Third Cavalry, which appeared in the May number of the JOURNAL OF THE MILITARY SERVICE INSTITUTION, the following comments on the rifle itself, and on other questions brought out by this article, suggest themselves to me:

I first fired the new rifle when it was in an experimental state and was being exhibited by a member of the board, which recommended its adoption. The weather was cold and no bull's-eye targets were available, so the firing took place at an improvised target, which consisted of a plank (painted white) which contained approximately the same area as the standing silhouette of the old skirmish group and which was placed at a distance of two hundred yards.

The principal object of this firing was to compare the rapidity of fire of the new rifle with that of the Krag Carbine, and at the same time place as many hits on the board as possible. After some practice manipulating the bolt of the new rifle I was able to fire eighteen shots per minute with eighteen hits. With the carbine the best score was sixteen shots with fourteen hits. Of course after the magazine was emptied the carbine was used as a single loader. This clearly illustrates the advantage of the clip gun over others, and especially when the clip gun may also be used as a single loader when desired. In connection with this feature of the new gun it is noted that in changing from fire as a single loader to magazine fire or vice versa there is a half-way stop for the cut-off in which position the bolt when drawn back is entirely removed from the piece. In changing from one class of fire to the other the cut-off, might easily be changed by accident only to the half-way position. This would be a serious mishap in action. However, it is understood that this gun is to be used habitually with the magazine turned "On," but the possibility of a mishap ought to be removed.

My next opportunity to fire the new rifle was at Sea Girt, in 1903, where one was on exhibition during the annual meeting of the N. R. A. Here time was limited, but opportunity for any one individual was more limited. I saw a well-known member of the Bisley team "sighting in" the gun at the 1000 yard range. After many misses he was on the target with 875 yards elevation, and the next shot was a bull. He then made a string of bulls that was amazing—seventeen, if I remember correctly. This speaks well for the gun, as a long-range gun when in the hands of an expert.

During the target season of the present year I was able to get possession of the new rifle kept at Headquarters, Department of Luzon. This afforded ample opportunity to make a careful comparison between the two arms. In these islands the months of January, February and March are ideal for target-practice if the mornings only are used. Each day is almost an exact duplicate of the one before it, so it was an easy matter to get nearly equal conditions for all trials.

I shot the carbine and rifle alternately, through each course as prescribed in firing regulations.

The results show, I think, the approximate superiority of the rifle over the carbine. They are tabulated below:

MARKSMAN'S COURSE—RECORD PRACTICE

	SLOW AND RAPID FIRE	SKIRMISH	AGGREGATE	PER CENT.
Carbine.....	258	169	427	85.40
Rifle.....	278	157	435	87.0

SHARPSHOOTER'S COURSE

	SLOW FIRE	RAPID FIRE	AGGREGATE	PER CENT.
Carbine.....	76	35	111	74.
Rifle.....	86	41	127	84.67

EXPERT RIFLEMAN'S TEST

	SLOW AND TIMED FIRE	SKIRMISH	AGGREGATE	PER CENT.
Carbine	147	69	216	72
Rifle.....	159	72	231	77

AVERAGE PER CENT. FOR THREE COURSES

Carbine.....	77.13
Rifle.....	82.89

I believe the above noted difference (6%) to represent about the average difference in accuracy of the two guns. At the midranges the difference is about 6%; at the long ranges about 10 %; at the two short ranges, on account of the insecurity of the prescribed positions, the personal error of the individual counteracts most of the advantage of the rifle.

This difference, of course, is accounted for by the general superiority of the new arm.

It is traceable directly, however, to two great factors, the increased distance between sights and the proper use of the sling.

Our infantry brother, except their expert shots, tell us the carbine is preferable to the rifle, but not one of them would care to exchange.

They chide us at our poor showing by comparison of scores. In years past when everybody shot the same arm at the army competitions the cavalryman held his own.

Give us the same arm and nothing will be more welcome to the cavalry than combined competitions. Major Brown in his article intimates that the sling should not be issued to the cavalry. Give us the sling or else prohibit its use in target-practice by the infantry. Now that we are to have the same arm let us have all alike and get true comparisons. The most experienced shot, and perhaps the best in the infantry, once told me that the sling was worth about 2% to him at short ranges, and 4% at mid ranges. It is worth that to any one who masters its use. It serves also to distribute the recoil of this powerful arm and take some of it from the shoulder.

It is feared that the great recoil of this new rifle will make our task with the timid recruit and third-class man a much harder one. The tried and experienced shot will make good scores with any accurate arm, regardless of physical unpleasantness. But can we overcome that gun shyness which results when the new man has his shoulder badly bruised and his mental and physical equilibrium

disturbed by such power. Can we not reduce the muzzle velocity from 2300 f. s. to say, 2200 f. s., and still have a powerful and accurate weapon? Conversation with ordnance experts leads me to believe we can. I believe the decrease in energy of recoil would more than compensate for loss in accuracy and range.

Major Brown seems to favor the open sight rather than the peep sight. If it were a question of only one kind of a sight the open sight would probably be preferable. Let us have both if practicable. The number of our best riflemen who use the peep sight is greatly in excess of the number who use the open sight, and the former are gaining advocates each year. Many use it at rapid fire and skirmish. The open sight on the new rifle is a most excellent one, and lessens the necessity for a peep. But riflemen are cranks, and will never be satisfied unless they have a peep sight.

At Fort Sheridan in 1903, a member of the board which revised the system of "firing regulations for small arms" submitted a number of questions to the competitors there assembled, asking for expressions of opinion. Among these questions was the one of mixed competitions of officers and enlisted men. Few offered an expression of opinion on the subject for the reason that the question was an open one. I do not remember that a single enlisted man expressed an opinion on this subject. Chance remarks, however, led me to believe that they were not satisfied. Subsequent investigation has proven conclusively to me that the enlisted man does not care to compete against the officer for medals. I have yet to encounter a single enlisted competitor who favors the present system. I have had many opinions from officers on the subject, and they have unanimously approved the following substitute:

Designate and assemble competitors for division competitions as now prescribed. Have them all compete on the same range together. Award all the authorized medals of the division team to enlisted men. To each officer who makes a score equal to or better than that made by the bottom gold medal man (when more than one gold medal) award an additional gold medal; to each officer who makes a score equal to or better than that made by the bottom silver medal man, award an additional silver medal; and so on for the bronze medals. In sending competitors to the army team send the authorized division team of enlisted men, and in addition thereto every officer who wins a medal in division shoot. Distinguished marksmen to be eligible to win medals at the army shoot only. In selecting the team to represent the army in the National match select the twelve highest from each branch regardless of whether they be officers or enlisted men, for that is the army against the navy, marines and the National Guard.

To further emphasize the injustice of the present scheme the

following award of medals at the various competitions held in 1904 (including the Philippine Island) is noted:

	GOLD MEDALS	SILVER MEDALS	BRONZE MEDALS	TOTAL
Won by officers.....	17	25	28	70
Won by enlisted men	17	44	89	150

The total number of competitors was nearly as follows:

Officers, 140; enlisted men 910.

From the above the following is apparent: that half of the competing officers won medals; that one-sixth of the competing enlisted men won medals; that more than one-half the medals won by officers were silver or gold; that nearly two-thirds of the medals won by enlisted men were bronze; that officers won as many gold medals as the enlisted men won with about one-seventh as many competitors. But this is as it should be under the present system, for is not the officer the instructor, and does he not have all the advantage of opportunities? But surely it is not justice. I doubt if many of us ever gave this subject much thought. I should like to see others express an opinion with a view to speedy change.

CAMP STOTSENBURG, P. I.,
June 21, 1905.

Reviews and Exchanges.

The Campaign with Kuropatkin.*

THIS Book gives a very entertaining account of the correspondent's experience with the Russians from the outbreak of the war with the Japanese, through the battle of Liao-Yang. The author takes a most impartial view of the conflict, and though a British subject, appreciates the strong points of the Russians as well as of the Japanese. He says:

"There is no stamp upon the Russian officer as there is upon his brother of Britain and of Germany. In his diversity is at once the strength and the weakness of the Russian as an officer. As a student the Russian staff-officer is a gentleman and a soldier of rare intellectual attainment.

"The adaptability of the Russian is amazing, the result of a wide humanity, a ready sympathy.

"Strangely enough he draws most naturally to the Englishman and the American. These he respects. The Russian is a man of strong passions and wholly unmodern sincerity where his suspicions are not aroused. He loves and hates, sins and repents, has ideas and beliefs. * * * His nearness to nature is at all times apparent. His faults and his virtues are those of a strong race, of a man whose blood runs warm in his veins.

"The humanity of the Russians rises triumphant above their vocation, and one likes them for their breadth of views. So far it has been my good fortune to meet only the better class of officer and of man. In him I have found a man we British have lost much by cultivating so little.

"Much vile libel has been spread abroad about the Russian soldier's treatment of the Chinese in the war area. So far as I have seen (and I have seen most of the country he has traversed) the Russian soldier has behaved toward the Chinese with remarkable restraint and a simple-hearted good fellowship."

The Japanese success in the war has been due to the scientific intelligence of the leaders and the barbaric intensity of the fighting men. Much is written of the civilization of the Japanese nation and their excellence in battle is attributed to that. As a matter of

*_The Campaign with Kuropatkin_, by Douglas Story. Fully illustrated from photographs taken by the author. 8vo, 301 pp. London: T. Werner Laurie. Philadelphia: J. B. Lippincott Company. 1905.

fact their superiority to Western troops is due to the effective barbarism of the soldier in the ranks as much as to the scientific direction of the men in the War Office at Tokio.

The general course of events and the battles of Wafangho, Yang-tze-ling and Liao-Yang are briefly and lucidly described, and the author shows a good appreciation of the effect of modern weapons.

The chapter on "The Long Feud" ends thus: "Japan may close Russia's open ports in the China seas, but in so doing she will only force Russia back against her old-time enemy, Great Britain. It were well to realize this fact in all its bearings, to recognize thus early that natural law is more immutable than was ever statute law of Mede or Persian, to accept the inevitable, and to come to terms with Russia when those terms can be most advantageous to Great Britain. Britain's blindness is Germany's opportunity."

W. R. L.

The Man Roosevelt.

THIS book, which the author calls a portrait sketch rather than a biography, presents Theodore Roosevelt as politician, reformer, author, sportman, father of a family, and President of a great nation.

As might be expected from its scope, it is discursive and general in its treatment; but, nevertheless, it touches upon each part of its theme with illuminating detail. If the political side of the President's life receives a large share of attention, it is offset by several chapters revealing the domestic and personal sides of his character, which we venture to think are more to be expected from the title of the volume. Perhaps the most useful page of this department is that which explains what Mr. Roosevelt really said about race suicide.

On the whole, the book serves a useful purpose in painting in simple colors the life and character of Theodore Roosevelt without that undue enthusiasm for its subject which is often the condemnation of a biography.

It throws a generous light upon a strong and resolute life, and enables the reader to form a fair judgment of the "man, not as he might have been, nor as we might have liked to find him, * * * but of the man as he is."

E. B. S.

Distinguished Officers of the Army and Navy.*

UNDER the above misleading title, has recently been published a volume of short biographies of men who have achieved more or less success in the world, and most of whom have been commissioned officers in either the regular or volunteer force of the nation at one time or another, but in view of the title and in consideration of the omission from the list of nearly all those soldiers and sailors whose names are household words, it is impossible for the reviewer to retain his self-respect and at the same time be gentle or even kind in criticism of this work.

**Biographical Sketches of Distinguished Officers of the Army and Navy.* New York: L. R. Hamersly. 1905.

One of the subjects selected is apparently "famous," because he has been successful in operating a hotel at a well-known resort; another bears the blushing honor through achievements in the life insurance field—possibly both are entitled to distinction in that vocation which made Robin Hood and Captain Kidd famous.

The very few distinguished officers who are selected for places in the book are entitled to sincere sympathy; we are satisfied that they could not help it. Those who are not included have the satisfaction of being in a class with Grant, Sherman, Sheridan, Hancock, Thomas, Logan, Lawton, Corbin, Farragut, Dupont, Dewey, Evans, and scores of others whose names *are* historical. In short, the book, with the few exceptions referred to, is a poor specimen of cheap claptrap, with all the earmarks of a personal advertisement scheme, and is unworthy a place in any library.

The printing is good—the binding is in harmony with the text and offers the encouraging hope that the volume will soon fall to pieces. H. O. S. H.

The War Between the Union and the Confederacy and Its Lost Opportunities.*

THIS work is principally a personal narrative of the experiences of the author in the War of the Rebellion, in which he took part as an officer of the 15th Alabama Regiment, from Captain to Colonel. It contains the history of that regiment and its part in forty-eight battles and engagements. There are also presented what the author claims to be a justification of secession and throughout arguments based on the varying conditions, as they existed during the war, to show that the Confederacy should have succeeded; a criticism of Jefferson Davis, the Confederate Congress and some of the general officers of the Confederate and Union armies and includes the author's observations and experiences in the war with Spain.

The work runs through fifty chapters, the first five of which are devoted to the causes of secession and the war, and the attitude of the secessionists and the Union States towards each other, immediately preceding hostilities. These views and arguments are naturally written from the Southern, and it may be said, secession standpoint, being those held by the extremist Southern statesmen who finally succeeded in impressing them on most of the Southern people. They are apparently not "reconstructed" in any degree from comparison with the arguments on the other side, since the war, accessible to dispassionate inquirers, but rather, the author being at that period a young man of necessarily limited range of knowledge of those very complicated questions, has evidently drunk deep of the waters which flowed so copiously from fountains of the Davis and Toombs type, at the time, but which subsequent events rendered so stagnant.

Personal reminiscences, well told, of that exciting and history making period, are always of great interest as setting down details not found in war histories, and the author has certainly given us a

**The War Between the Union and the Confederacy and Its Lost Opportunities.* By William C. Oates, Colonel in the Confederate Army; Representative in the U. S. Congress, 1880-1894; Governor of Alabama, 1895, 1896; Brigadier General, U. S. V., in the War with Spain, 1898. Pub.: The Neale Publication Company, New York and Washington. 1905.

highly interesting and well told narrative. There could not be found a better description of the peculiar conditions which the surroundings imposed, in the enlisting of soldiers and the organization of troops for the Confederacy than is given by the author. His descriptions of the incidents of battles and compaigning are vivid and make excellent reading. His arguments to sustain the contention that secession could and should have succeeded will appeal to the speculative and imaginative mind.

The entire work is written in such a candid strain as to excite the admiration of the reader for the evidently sincere and straightforward character of the author, from which a positiveness bordering on obstinacy, which crops out in views and criticisms of men and measures, in no wise detracts. While all will not agree with some historical data given by the author on information and belief, the work as a whole is thoroughly readable and enjoyable by those who are attracted by the romance of the stirring events of forty years ago, as well as by actors in the great drama.

E. E. B.

The Russo-Japanese War.*

THIS volume is by Thomas Cowen, who was one of the war correspondents of the *Daily Chronicle* from February to May; then owing to the severity of the censorship he ceased sending his dispatches, but he still remained at the seat of war, and in September sent his manuscript from Korea.

The book describes the Japanese attitude. The Chinese and Koreans were helpless and hopeless; if China invited the partition of her provinces, then Japan cannot afford to let them all be taken by others for probable use against her.

The Russian point of view. Of Russian expansion generally there is undoubted justification. It is necessary, because Russia is really overcrowded, and much misery results. The population is agricultural, and much of the land is poor. The peasant needs clothes, tools and so on; in fact he needs a market where he can sell his corn and buy goods. Siberia could be made a paradise in the course of time if it were not so cut off from everywhere. Siberia has no ice-free port (in all Russia there is hardly one). "But here," a Russian would say, "is a fertile country, occupied by people who do not use it" properly, never will as long as they are left to themselves. Why not take it?

The first stages of the war are described somewhat in detail, and in the last hundred pages the military operations from the Yalu to Liao-Yang are described in outline.

W. R. L.

**The Russo-Japanese War.* From the outbreak of hostilities to the Battle of Liao-Yang. By Thomas Cowen. With illustrations, maps and plans. London. Edward Arnold, 41 and 43 Maddox Street, Bond Street, W., 1904. (8vo, 343 pages.)

Editor's Bulletin.

Change of Quarters for Library and Museum.

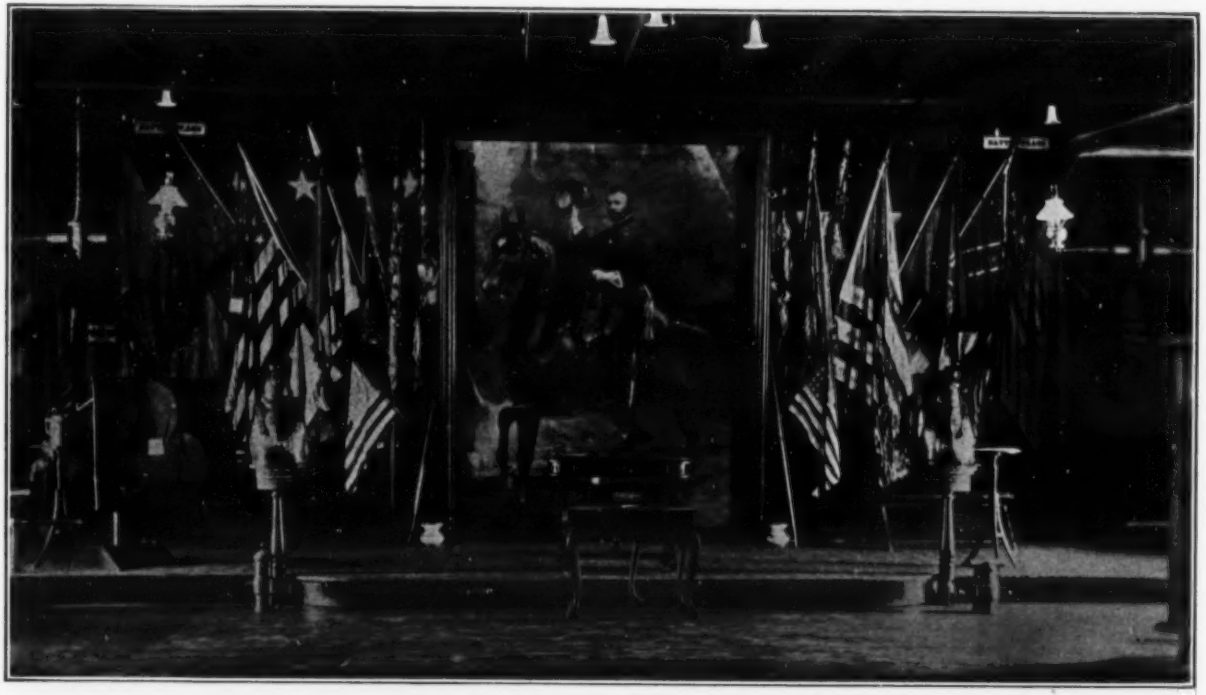
THE Secretary announces the removal of the contents of the Library and Museum, and of the Offices of the Secretary and Treasurer of the Institution from the rooms in the Quartermaster's Building to the Clock Tower Building in the grounds of the New York Arsenal, on Governor's Island, N. Y. H. The new quarters will afford more than double the space heretofore available, and relieve the congestion which for some years has prevented a proper exhibition of the Relics and Trophies belonging to or in the custody of the Institution.

A handsome room has been fitted up for the use of the Officers and Council; steam heat and electric lighting plants have been installed, and many objects of historical interest, heretofore hidden from public view for want of room, have been unpacked and displayed to advantage. The full-page illustration facing this page is from a photograph of the north wall of the Museum.

In every way the change is for the better, and the thanks of the Institution are due to the Chief of Ordnance and the Department Commander for their efforts thus to promote the interests of the Military Service Institution.

Loans to the Museum.

Since the change of quarters (completed August 15) the number of visitors to the Museum has perceptibly increased, and a renewal of public interest in that department of the Institution is anticipated. Officers of the Army or others possessing miltary curios or trophies, especially those acquired during their service in China, Cuba, or the Philippines, are invited to place some of them here on exhibition as loans for a limited time. Under Army Regulations, articles intended for the Museum which are turned over to the Post Quartermaster and marked



THE MUSEUM—NORTH WALL OF CLOCK-TOWER BUILDING.

"Miltary Service Institution, Governor's Island, N. Y.," may be transported without expense to the shipper.

The Seaman Second Prize.

At the stated meeting of the Council, August 18, 1905, it was unanimously

"*Resolved*, That the offer of Major Louis L. Seaman (late) U. S. V., to add to his annual prize of $100, a second prize of $50, for papers on subjects having a bearing on the general study and practice of 'Military Hygiene,' be accepted and the Secretary is instructed to convey the thanks of the Institution to Major Seaman for his generous action in the matter."

Return of a Confederate Flag.

An application having been made for the transfer of the Battle Flag of the 18th Alabama Regiment, C. S. A., now in the Museum, to the custody of the Department of Archives and History, State of Alabama, the Executive Council has directed the Secretary to comply with the request.

Award of Hunt Prize.

The Hunt Prize for 1905—Fifty Dollars and Certificate of Award—has been given to Captain Edward H. Schulz, Corps of Engineers, for the best short paper on an artillery subject, published in the JOURNAL OF THE MILITARY SERVICE INSTITUTION during the twelve months ending July 1, 1905, viz.: "Land Defense of Seacoast Fortifications."

Journal of the Military Service Institution 1878 — 1905

Governor's Island N. Y. H.

THE JOURNAL

NOVEMBER-DECEMBER, 1905

SOME of the papers approved for early publication in this JOURNAL.

I. "ATHLETICS IN THE ARMY."—
1. By Major R. L. Bullard, 28th Infantry.
2. By Capt H. S. Hawkins, Subsistence Department, U. S. A.

II. "MODERN ARMS, MODERN WARFARE AND GOVERNMENTS."—By John Brisben Walker, Esq. (Editor, Cosmopolitan Magazine), being a lecture before the M. S. I. at Governor's Island, N. Y.

III. "DESCRIPTIVE MILITARY RECORD AND ACCOUNT BOOK FOR ORGANIZATIONS OF THE MILITARY SERVICE."—By Capt. Howard R. Hickok, 15th Cavalry.

IV. "FIELD AND SIEGE OPERATIONS IN THE FAR EAST." (Being the fourth of the series.)—By Col. W. R. Livermore, Corps of Engineers; which will cover a professional review of the operations attending the siege of Port Arthur. Illustrated by maps and diagrams.

V. "IMPROVEMENT OF HORSES FOR MILITARY PURPOSES."—By Lieut.-Col. E. E. Dravo, Subsistence Department.

VI. "THE TRAINING AND PERSONNEL OF VOLUNTEER TROOPS."—By Capt. G. D. Snyder, (late) N. G. P.

VII. "ORGANIZATION AND FORMATION OF INFANTRY TROOPS MOST SUITED TO PRESENT BATTLE CONDITIONS."—By Lieut. G. M. Brooke, Artillery Corps.

VIII. "THE NON-COMMISSIONED OFFICERS, THEIR EFFICIENCY AN ESSENTIAL FACTOR IN OUR ARMY."—By Lieut. G. A. Wieser, Fifteenth Infantry.

IX. "TYPES AND TRADITIONS OF THE OLD ARMY." Recent additions to this series comprise "Old Fort Put," from old MSS. —By Brig.-Gen. J. P. Farley, U. S. A.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

The Military Service Institution.

HONORARY MEMBERS.

THE PRESIDENT OF THE UNITED STATES.

Ex-President GROVER CLEVELAND, LL.D.

The SECRETARY OF WAR. The LIEUTENANT-GENERAL.

OFFICERS AND COUNCIL.

President
Major-General THOMAS H. RUGER, U. S. Army.

Resident Vice-Presidents.
Major-Gen. JAMES F. WADE, U. S. A. Brig.-Gen. JOHN W. BARRIGER, U. S. A.

Secretary.
Brig.-Gen. T. F. RODENBOUGH, U. S. A.

Treasurer.
Major E. M. WEAVER, Artillery Corps.

Asst. Secretary.
Capt. W. J. GLASGOW, 13th Cav. A. D. C.

Vice-Treasurer.
Lieut. W. H. JOHNSON, 8th Infantry.

Executive Council.

Term ending 1911.

Major D. L. BRAINARD, Subsistence Dept.
Captain F. W. COE, Artillery Corps.
Lieut. Colonel E. E. DRAVO, Subsistence Dept.
Brig. Gen. A. L. MILLS, United States Army.
Colonel F. A. SMITH, Eighth Infantry.
Bvt. Major-Gen. A. S. WEBB, (late) U. S. A.

Term ending 1909.

Major G. S. BINGHAM, Quartermaster's Dept.
Colonel J. E. GREER, Ordnance Dept
Colonel W. R. LIVERMORE, Corps of Eng's.
Major C. E. LYDECKER, N. G. N. Y.
Major A. MURRAY, Artillery Corps.
Col. C. C. SNIFFEN, Pay Dept.

Term ending 1907.

Finance Committee.		*Publication Committee.*
	Bvt. Brig.-Gen. D. APPLETON, N. G. N. Y.	
	Colonel E. E. BRITTON, N. G. N. Y.	
Gen BARRIGER	Major A. S. CUMMINS, Artillery Corps.	Gen. BARRIGER.
Lieut. Col. DRAVO.	Brig. Gen. F. D. GRANT, U. S. Army.	Gen. RODENBOUGH.
	Colonel H. O. S. HEISTAND, Military Sec'y.	Col. GREER.
	Colonel S. C. MILLS, Insp. Gen. Dept.	Col. SMITH.
	Lieut. Colonel H. S. TURRILL, Medical Dept.	

CORRESPONDING MEMBERS OF COUNCIL.

Term ending January, 1907.

Major W. E. BIRKHIMER, G. S. Art. Corps.
Major W. M. BLACK, Corps of Engineers.
Major A. P. BLOCKSOM, (Cav.), In. Gen. Dept.
Lieut. G. M. BROOKE, Artillery Corps.
Major W. C. BROWN, Third Cavalry.
Major R. L. BULLARD, Twenty-eighth Inf.
Col. J. H. CALEF, U. S. A. (retired).
Lieut.-Col. C. J. CRANE, Eighth Infantry.
Brig.-Gen. F. S. DODGE, Paymaster General.
Capt. F. DRAKE, A. D. C., National Guard. Pa.
Brig.-Gen. W. S. EDGERLY, U. S. A.
Lieut. A. P. S. HYDE, Artillery Corps.
Capt. J. H. PARKER, Twenty-eighth Infantry.
Col. J. W. POWELL, U. S. A. (retired).
Capt. W. C. RIVERS, First Cavalry.
Capt. J. RONAYNE, Twenty-eighth Infantry.
Lieut.-Col. A. C. SHARPE, Thirtieth Infantry.
Capt. J. A. SHIPTON, Artillery Corps.
Major A. SLAKER, Artillery Corps.
Capt. M. F. STEELE, Sixth Cavalry.
Capt. P. E. TRAUB, Thirteenth Cavalry.

MEMBERSHIP AND DUES.

Membership dates from the first day of the calendar year in which the "application" is made, unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

Please advise promptly of changes of address.

Annual Prizes, 1905

(For Rules governing awards, see January, March or May numbers.)

Gold and Silver Medals

First Prize—Gold Medal, $100 and Life Membership.

Second Prize—Silver Medal, $50 and Honorable Mention.

Subject: "THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT; THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED."

The Seaman Prize

First Prize—One Hundred Dollars in Gold.

Subject: "HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED."

Second Prize—Fifty Dollars.

Subject: "MILITARY HYGIENE, AND HOW CAN THE PEOPLE OF THE UNITED STATES BE EDUCATED TO APPRECIATE ITS NECESSITY?"

The Santiago Prize

Prize—Fifty Dollars.

Subject: "FOR THE BEST ORIGINAL ARTICLE UPON MATTERS TENDING TO INCREASE THE EFFICIENCY OF THE INDIVIDUAL SOLDIER, THE SQUAD, COMPANY, TROOP OR BATTERY, PUBLISHED IN THE JOURNAL OF THE MILITARY SERVICE INSTITUTION."

Short Paper Prizes

Prizes—Fifty Dollars and Certificate of Award.

Subjects: BEST ESSAY ON MATTERS DIRECTLY AFFECTING THE INFANTRY ("HANCOCK"), CAVALRY ("BUFORD"), ARTILLERY ("HUNT") AND THE GENERAL SERVICE ("FRY"), RESPECTIVELY, PUBLISHED IN THE JOURNAL DURING A TWELVEMONTH.

Announcement

Back Numbers of the Journal

Copies of Numbers 1, 2, 3, 4, 79, 98, 99, 117 and 119 of the JOURNAL OF THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES may be disposed of at a premium by communicating with the Secretary, M. S. I., Governor's Island, N. Y.

Publisher's Department.

VEHICLE MAKERS FOR THE WORLD.

(Reprinted from August "World's Work" Magazine.)

The bullock wagon of Egypt, whose cumbersome wheels still crunch the sand of the roads along the Nile, is in one corner of the Palace of Transportation, and on the opposite side of the great stretch of floor, under a big American flag, is the Studebaker vehicle in its scores of forms. Thus, in a walk of two minutes, one can cover thirty centuries, and bear the greeting of the Sphinx to the Flag and all it stands for in industry and achievement. For industry and achievement in America are but the commercial expression of freedom, the hammering out, with the free arm, of the ideas that take shape in the free man.

And these great Studebaker exhibits, covering nearly 10,000 square feet, are deeply impressive embodiments of the free industrial spirit of the country. Moreover, they are very interesting in themselves. But behind them loom the great factories at South Bend, and the fifty-two years of cumulative growth, from a little blacksmith shop, with a yearly product of two wagons, to the place of conceded leadership in the vehicle industry of the world. This is progress that is typically American. It is the sort of progress that has changed the great valley of the Mississippi, in a century, from a wilderness into the mightiest industrial empire of the ages. Mankind can point to no achievement comparable to this transformation in all its long march from the Stone Age until now.

To have been a part of the last half-century in this wonderful transformation is the distinction of the Studebakers. That is their real exhibit—it is the country whose cities they have helped to build, whose farms and mines they have aided greatly in developing. Many of the prairie schooners that sailed across the plains in the fifties were Studebaker wagons. The roads into the far Northwest followed trails that had been broken by Studebakers. In the fat valleys of the Miami, the Illinois, the Missouri—all over the broad West, they bore the loads.

And when the farmer or the business man had reached the point where he wanted a carriage for his family, the Studebakers were ready to supply him, as they were later with an automobile. And the skill they had acquired in making wagons they employed and developed in building carriages. until their vehicles have come to be accepted in every part of the world as the standard of excellence. There are shown in their exhibits at the Fair types of seventy-five vehicles, such as broughams, victorias, depot-wagons, coupe rockaways, opera-busses, phætons, top-boggies, road-wagons, runabouts, extension and canopy-top surreys, electric and gasoline automobiles, farm-wagons, dump-wagons, coal-wagons, ice-wagons, express and truck-wagons, merchants' delivery-wagons, sheep-camp and mountain wagons; and there is, besides, a splendidly equipped harness and stable accessory department. This contains about one hundred sets, of different styles and

grades, of four-in-hand, tandem, double and single brougham, double and single road-harness, surrey-harness, and, in fact, almost all kinds of harness for pleasure and teaming purposes. There is a line of riding-saddles shown which are made not only from an artistic point of view, but for comfort. In stable furnishings there are blankets, suits, brushes, whips, coachman-suits, lunch-baskets, dash-clocks, lamps, road-kits—in fact, the visitor will be amazed at the wide variety included in these great Studebaker exhibits. The product of the Studebakers fills a train-load of freight-cars every working day. In marketing it, there are five thousand dealers, in all parts of the United States, besides trade representatives in every section of the world, and there are great Studebaker repositories in Chicago, New York City, San Francisco, Portland (Oregon), Kansas City, Salt Lake City, Denver, and Dallas. Surely, the blacksmith-shop of fifty years ago was an acorn from which has come a spreading oak of trade and industry. And that simile really suggests the manner of the Studebaker growth. It has been like a tree. Each year there has been added a widening ring of accomplishment. And like a tree, the great business has grown from within. There has been no compelling hand from without, grasping widely scattered factories and bringing them into a giant consolidation, as has been true in many industries; but, nurtured by the sap of its own strong life, it has become a business oak, strong through and through.

* * *

THE PRACTICAL AND DECORATIVE ADVANTAGES OF "ENAMETILE" IN BUILDING.

The New York Metal Ceiling Co., 537 to 541 West 24th Street, New York City, can take a just pride in the success of their "ENAMETILE."

It is an enameled metal tiling, non-corrodible, germ proof, sanitary. While it is a comparatively new product it has gotten beyond the experimental period. It has been successfully used in refrigerator work, Turkish baths, sanitariums, and other similar places where sanitary conditions were essential, as well as in halls, restaurants, cafés, bathrooms and the many various places that ceramic tiling may be used. It is less expensive than ceramic tiling and less difficult to erect. It has been endorsed by many of the representative architects and builders in various parts of the country as well as in the vicinity of New York. It is fast taking a prominent place as a most popular and desirable wall finish because of its merit and advantages.

The New York Metal Ceiling Co. has long been identified with the Building Trade as makers of Metal Ceiling, and their reputation for a high standard of quality and good service in this line gave the trade confidence that "ENAMETILE" would measure up to every claim, and practical results have proven this confidence was not misplaced.

The moderate price of "ENAMETILE," and the fact that it is not difficult to erect, will interest all who desire the ornate richness and sanitary conditions of tiling, but have in the past been prevented from availing themselves thereof because of these facts.

REVOLUTION IN THE "KEEPING" OF MILK.

Few people stop to think how universal and important, as a part of our diet, is ordinary milk. Used from time immemorial, by every civilized nation of the world, it is everywhere recognized as a most nutritious ingredient of our daily food. But it unfortunately does not "keep," and from the moment it has been drawn from the udder it begins to change. How to hinder or prevent this, and be able to keep milk indefinitely, has been the dream of inventors.

During the first half of the last century, certain foreign inventors succeeded in evaporating a part of the water from milk, and with the addition of cane sugar, made the product now known as condensed milk. (Patents of de Heine, 1810; Newton, 1835; Grimwade, 1847; and others; and more especially the process of de Lignac, which received the silver medal at the French exposition of 1849). Still this was only the beginning after all, or the first step for the more complete method which would, by removing all the water and reducing it to a powder form, compose a product which could be transported to all parts of the world, and be used as desired, making it sure that the remainder would be available whenever wanted, and not, like ordinary condensed milk, spoil soon after the container was opened.

The solution of this problem was accomplished, after much labor and experimenting, by Mr. Wm. Horlick, of Racine, Wis., some twenty-five years ago. By combining pure, rich milk with the extracts of malted barley and wheat, it was found possible not only to preserve the milk indefinitely, but also to do this by his special process, so as to obtain in powder form, a product far more nutritious and digestible than ordinary or condensed milk. All the useless water in condensed milk has been removed, and instead of cane sugar so often objectionable to delicate stomachs, the nutritious extracts of the malted grains are used to enrich the milk.

Hence this unique product, Horlick's Malted Milk, is so convenient that a delicious food-drink may be made in a moment by simply stirring the powder in water, so stable that it is used in the most trying climates, is preserved indefinitely, and furnishes the most delicate, palatable and digestible food-product. It has received the endorsement not only of eminent physicians everywhere, but also the approval of actual use in thousands of homes in all parts of the world.—*Scientific American, Export Ed., July*, 1905.